

No. 14422

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United States  
Court of Appeals  
for the Ninth Circuit

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THE UNITED STATES NATIONAL BANK OF  
PORTLAND, OREGON, TRUSTEE, and  
WALTER G. E. SMITH, Appellants,

vs.

FABRI-VALVE COMPANY OF AMERICA, a  
Corporation, Appellee.

FABRI-VALVE COMPANY OF AMERICA, a  
Corporation, Appellant,

vs.

THE UNITED STATES NATIONAL BANK OF  
PORTLAND, OREGON, TRUSTEE, and  
WALTER G. E. SMITH, Appellees.

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Transcript of Record

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Appeals from the United States District Court for the  
District of Oregon

FILED

SEP 8 1954

PAUL P. O'BRIEN

CLERK



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[Clerk's Note: When deemed likely to be of important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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CHAPTER I. THE HISTORY OF THE

REIGN OF CHARLES THE FIRST

FROM HIS BIRTH TO HIS DEATH

IN THE YEAR 1649

BY JOHN BURNET

OF THE UNIVERSITY OF OXFORD

IN TWO VOLUMES

VOLUME THE FIRST

THE HISTORY OF THE

REIGN OF CHARLES THE FIRST

FROM HIS BIRTH TO HIS DEATH

IN THE YEAR 1649

In the District Court of the United States for the  
District of Oregon

Civil Action No. 5783

THE UNITED STATES NATIONAL BANK OF  
PORTLAND, OREGON, TRUSTEE, and  
WALTER G. E. SMITH, Plaintiffs,

vs.

FABRI-VALVE COMPANY OF AMERICA, a  
Corporation, Defendant.

COMPLAINT FOR INFRINGEMENT OF  
UNITED STATES LETTERS PATENT  
No. 2,001,271

Bill of Complaint

Plaintiffs complain of the defendant, and for  
cause of action against the defendant, allege:

I.

The plaintiff, the United States National Bank  
of Portland, Oregon, is a national banking associa-  
tion, with its principal office and place of business  
in the city of Portland, county of Multnomah, and  
State of Oregon.

II.

The plaintiff, Walter G. E. Smith, is a citizen  
and resident of Longbranch, county of Pierce, State  
of Washington.

III.

The defendant, Fabri-Valve Company of Amer-  
ica, is a corporation organized and existing under  
and by virtue of the laws of the State of Oregon,

and has a regular and established place of business in the city of Portland, county of Multnomah, and State of Oregon.

#### IV.

That the jurisdiction of this Court is based upon the patent laws of the United States of America.

That the acts of infringement hereinafter complained of were and are being committed by the defendant in the city of Portland, county of Multnomah, State of Oregon, within this District and elsewhere in the United States.

#### V.

That on December 3, 1930, Walter G. E. Smith, being, within the meaning of the statutes of the United States then in force, the first, original and sole inventor of a certain new, useful and patentable improvement in gate valve, and being entitled to receive Letters Patent therefor under the provisions of said statutes, duly filed in the United States Patent Office an application for Letters Patent, Serial No. 499,709, for said invention.

That on May 14, 1935, the said Walter G. E. Smith having complied with all of the requirements of the then existing statutes of the United States and Rules of Practice of the United States Patent Office relating to the grant of Letters Patent for an invention, Letters Patent of the United States No. 2,001,271 were duly granted to the said Walter G. E. Smith on said application Serial No. 499,709, which Letters Patent, or a copy thereof, the plaintiffs will produce as this Court may direct.

## VI.

That on the 17th day of December, 1935, the said Walter G. E. Smith assigned to Sue Olive Smith, as Trustee, the entire right, title and interest in and to said Letters Patent No. 2,001,271, which assignments were received by the said Sue Olive Smith and acknowledged by her to be for the benefit of Patricia Ann Smith and Virginia Hedwig Smith, infant daughters of the said Walter G. E. Smith and Sue Olive Smith.

## VII.

That thereafter, the said Sue Olive Smith, Trustee, died, and the Circuit Court of the State of Oregon for the County of Multnomah, upon a petition of Walter G. E. Smith, on the 25th day of May, 1937, considered, ordered, adjudged and decreed that the United States National Bank of Portland, Oregon be substituted and appointed trustee of said trust in the place and stead of the said Sue Olive Smith, deceased.

That the entire right, title and interest in and to the above referred to United States Letters Patent No. 2,001,271 has, ever since the 25th day of May, 1937, been vested in the United States National Bank of Portland, Oregon, as trustee.

## VIII.

That defendant has, subsequent to the date of said Letters Patent and prior to the filing of this Bill of Complaint, infringed the said Letters Pat-

ent, and threatens to continue to so infringe, by making or causing to be made, selling or causing to be sold, and using or causing to be used, within this District and elsewhere in the United States, gate valves made in accordance with and embodying the inventions disclosed, described and claimed in plaintiff's aforesaid Letters Patent No. 2,001,271.

That all of the aforesaid acts were committed by said defendant wilfully and without consent of the plaintiffs.

### IX.

That plaintiffs have placed the required statutory notice on all gate valves manufactured and sold by them or by their licensees under said Letters Patent, and have given notice in writing to said defendant.

Wherefore, plaintiff prays:

1. That defendant, its officers, agents, servants and employees be enjoined, during the pendency of this action and permanently, from directly or indirectly making or causing to be made, selling or causing to be sold, or using or causing to be used gate valves made in accordance with or embodying the inventions of Letters Patent No. 2,001,271;

2. That defendant be required to account to plaintiffs for profits and damages occasioned by reason of defendant's infringement of said Letters Patent;

3. That defendant be required to pay the costs of this action, including reasonable attorneys fees as may be allowed to plaintiffs by the Court; and

4. That plaintiffs have such other and further relief as the Court may deem meet and just.

THE UNITED STATES NATIONAL  
BANK OF PORTLAND (Oregon)  
By COOK AND SCHERMERHORN,  
/s/ HAROLD D. COOK,  
Attorneys for Plaintiff

Duly Verified.

[Endorsed]: Filed October 11, 1950.

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[Title of District Court and Cause.]

ANSWER

First Defense

Answering the complaint herein:

I.

Defendant admits the allegations of paragraphs I, II and III thereof.

II.

As to paragraph IV, defendant admits the jurisdiction of this Court and denies each and every other allegation in said paragraph IV contained.

III.

As to paragraph V, defendant admits that on or about December 3, 1930, Walter G. E. Smith filed in the United States Patent Office an application for Letters Patent, Serial No. 499,709, and that on May 14, 1935, Letters Patent of the United States,

No. 2,001,271, were granted to the said Smith on the said application; denies each and every other allegation in said paragraph V contained.

#### IV.

Admits paragraph VI and VII and denies each and every allegation in paragraphs VIII and IX of said complaint.

Wherefore, defendant prays that plaintiffs be denied relief herein and recover naught, that said complaint be dismissed, that plaintiffs be required to pay the costs of this action, including defendant's reasonable attorney's fees to be allowed by the court and that defendant have such other and further relief as the Court may deem meet and just.

FABRI-VALVE COMPANY OF  
AMERICA, Defendant

/s/ By W. B. SHIVELY,  
Attorney for Defendant

Duly Verified.

Receipt of copy attached.

[Endorsed]: Filed November 6, 1950.

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[Title of District Court and Cause.]

#### PRETRIAL ORDER

The above entitled case came on regularly for pretrial conference before the undersigned Judge of the above entitled court on Monday, February 19, 1951, plaintiff Walter G. E. Smith appearing in person and plaintiffs appearing by Harold L.



Cook and Arthur S. Vosburg, and defendant appearing by W. B. Shively and Elmer A. Buckhorn, the parties, with the approval of the court, agreed upon the following

Statement of Facts

I.

That plaintiff, the United States National Bank of Portland, Oregon, is a national banking association with its principal office and place of business in the City of Portland, County of Multnomah, State of Oregon.

II.

That plaintiff, Walter G. E. Smith, is a citizen and resident of Longbranch, County of Pierce, State of Washington.

III.

That defendant Fabri-Valve Company of America is a corporation organized and existing under and by virtue of the laws of the State of Oregon with a regular and established place of business in the City of Portland, County of Multnomah, State of Oregon.

IV.

That the jurisdiction of this court is based upon the patent laws of the United States of America.

V.

That on December 3, 1930, Walter G. E. Smith filed in the United States Patent Office an application for Letters Patent, Serial No. 499,709, and that on May 14, 1935, Letters Patent of the United

States, No. 2,001,271, were duly granted to the said Walter G. E. Smith on said application, Serial No. 499,709.

#### VI.

That on the 17th day of December, 1935, said Walter G. E. Smith assigned to Sue Olive Smith, as trustee, the entire right, title and interest in and to said Letters Patent No. 2,001,271, which assignment was received by the said Sue Olive Smith and acknowledged by her to be for the benefit of Patricia Ann Smith and Virginia Hedwig Smith, then infant daughters of said Walter G. E. Smith and Sue Olive Smith.

#### VII.

That subsequent to the 17th day of December, 1935, Sue Olive Smith, trustee, died, and the Circuit Court of the State of Oregon for the County of Multnomah, upon petition of Walter G. E. Smith, on the 25th day of May, 1937, considered, ordered, adjudged, and decreed that The United States National Bank of Portland, Oregon, be substituted and appointed trustee of said trust in the place and stead of said Sue Olive Smith, deceased; that the entire right, title and interest in and to the above referred to United States Letters Patent No. 2,001,271 has ever since the 25th day of May, 1937 been vested in plaintiff, The United States National Bank of Portland, Oregon, as trustee.

#### VIII.

That on April 13, 1950, plaintiffs, by their attorneys, notified defendant in writing that valves

manufactured and sold by Fabri-Valve Company of America infringe Letters Patent No. 2,001,271, to Walter G. E. Smith, for Gate Valve. Said written notice was sent to defendant, Fabri-Valve Company of America, by registered mail and acknowledged to have been received by it on April 14, 1950. Said notice called upon defendant to immediately desist from the further manufacture and sale of valves in infringement of said Letters Patent, and to account for profits derived from the sale of the infringing item and for damages suffered by plaintiff.

### Plaintiffs' Contentions

#### I.

That on December 3, 1930, Walter G. E. Smith, being, within the meaning of the statutes of the United States then in force, the first, original and sole inventor of a certain new, useful and patentable improvement in gate valve, and being entitled to receive United States Letter Patent therefor under the provisions of said statutes, duly filed in the United States Patent Office an application for Letters Patent, Serial No. 499,709, for said invention. That on May 14, 1935, the said Walter G. E. Smith having complied with all the requirements of the existing statutes of the United States and the Rules of Practice of the United States Patent Office relating to the grant of Letters Patent for an invention, was duly granted Letters Patent of the United States No. 2,001,271 on said application; that defendant, subsequent to the 14th day of May, 1935, and prior to and within six years of the date

of filing of complaint herein, has infringed claims 1, 2, 3, 5 and 6 of the said Letters Patent No. 2,001,271, and threatens to continue to so infringe, by making or causing to be made, selling or causing to be sold, and using or causing to be used, in the City of Portland, County of Multnomah, State of Oregon, within this district, and elsewhere in the United States, gate valves made in accordance with and embodying the inventions disclosed, described and claimed in the plaintiff's aforesaid patent No. 2,001,271; that all of the aforesaid acts were committed by said defendant willfully and without the consent of the plaintiffs; that plaintiffs have placed the required statutory notice on all gate valves manufactured and sold by them or by their licensees under said Letters Patent and have given notice in writing to said defendant.

### Defendant's Contentions

#### I.

That the defendant has never infringed the plaintiff's patent in suit.

#### II.

That the gate valves manufactured and sold by defendant since the issuance of the patent in suit do not infringe any of the claims of the patent in suit.

#### III.

That all of the claims of the patent in suit must be strictly construed as clearly evidenced by the file history of the application for the patent in suit.

IV.

That the plaintiffs and/or their licensees have not placed the required statutory notice on all gate valves manufactured and sold by them or by their licensees under said Letters Patent.

Issues To Be Determined

I.

Has defendant, subsequent to the 14th day of May, 1935, the date of granting Letters Patent of the United States No. 2,001,271, to plaintiff Walter G. E. Smith, and within six years prior to the date of filing of this complaint, infringed the said Letters Patent No. 2,001,271, and more particularly claims 1, 2, 3, 5 and 6 thereof, by making or causing to be made, selling or causing to be sold, or using or causing to be used in the City of Portland, County of Multnomah, State of Oregon, or elsewhere in the United States, gate valves made in accordance with and embodying the inventions disclosed, described and claimed in said Letters Patent No. 2,001,271 as exemplified by plaintiff's exhibits 3, 4 and 9 and defendant's exhibits F, G, H, J and K?

II.

Should defendant, its officers, agents, servants and employees, be permanently enjoined from directly or indirectly making or causing to be made, selling or causing to be sold, or using or causing to be used, gate valves embodying and employing the inventions described and claimed in said Letters Patent No. 2,001,271, as exemplified by plaintiffs'

Exhibits 3, 4 and 9, and defendant's Exhibits F, G, H, J and K.

### III.

Should the defendant be made to account to plaintiff for profits and damages?

### IV.

Should costs and attorney fees be allowed to either the plaintiff or defendant?

### Stipulation

It is stipulated and agreed by and between counsel for the respective parties, the Honorable James Alger Fee concurring, that the question of whether or not plaintiffs and/or their licensees have placed the required statutory notice on all gate valves manufactured and sold by them under said Letters Patent shall be resolved at the time of the accounting; and that plaintiffs shall have until the time of said accounting within which to take depositions regarding said matter.

### Plaintiffs' Exhibits

1. U. S. Letters Patent No. 2,001,271.
2. Blue prints (. . sheets) of improved 14" gate valve manufactured and sold by licensees under U. S. Letters Patent No. 2,001,271.
3. Blue prints (4 sheets) of 14" gate valve manufactured and sold by defendant Fabri-Valve Company of America.
4. Two sheets drawings on Bristol board of 4"

gate valve No. 1063 manufactured and sold by defendant, Fabri-Valve Company of America.

5. Aluminum model of gate valve manufactured and sold by licensees under U. S. Letters Patent No. 2,001,271.

6. Reserved for plastic and wood model of gate valve manufactured and sold by licensees under U. S. Letters Patent No. 2,001,271.

7. Reserved for plastic and wood model of gate valve manufactured and sold by defendant Fabri-Valve Company of America.

8. Reserved for actual sample valve manufactured and sold by licensees under U. S. Letters Patent No. 2,001,271.

9. Reserved for actual sample valve No. 1063 manufactured and sold by defendant Fabri-Valve Company of America.

10. Sample of bleached pulp.

11. Catalogue issued by defendant Fabri-Valve Company of America.

12. Agreement, dated December 4, 1945, between Walter G. E. Smith and Western Machinery Corporation, an Oregon corporation, and assignment to United States National Bank of Portland, Oregon.

13. Agreement dated August 9, 1939, between the United States National Bank of Portland, Oregon, and Crane Co.

14. Agreement dated May 13, 1938, between the United States National Bank of Portland, Oregon, and Crane Limited.

15. Records showing sales of gate valves by Western Machinery Corp., licensee under U. S.

Letters Patent No. 2,001,271 for period from January 1, 1946 to December 1, 1947.

16. Records showing sales of gate valves by Western Machinery Corp., licensee under U. S. Letters Patent No. 2,001,271 for period from December 1, 1947 to July 1, 1949.

17. Records showing sales of gate valves by Western Machinery Corp., licensee under U. S. Letters Patent No. 2,001,271 for period from July 1, 1949 to January 1, 1951.

18. Records showing sales of gate valves by Crane Co., licensee under U. S. Letters Patent No. 2,001,271 in the United States from October 1, 1946 to October 1, 1949.

19. Records showing sales of gate valves by Crane Co., licensee under U. S. Letters Patent No. 2,001,271 in the United States from October 1, 1949 to January 1, 1951.

20. Reserved for deposition of officer or employee of Crane Company that the required statutory notice has been placed on all gate valves manufactured and sold by it under the patent in suit.

21. Copy of advertisement appearing on page 109 of Vol. LVII, No. 11, of the magazine "Time" by Crane Co.

#### Defendant's Exhibits

A. Certified copy of file wrapper and contents of the United States Letters Patent in suit No. 2,001,271.

B. Copies of reference patents cited in file wrapper of United States Letters Patent No. 2,001,271, as follows:



- B1—United States Patent No. 109,001—Glass.  
B2—United States Patent No. 1,613,509—Gill.  
B3—United States Patent No. 259,658—Atcheson.  
B4—United States Patent No.—988,777—Hedrich.  
B5—United States Patent No. 1,753,524—Mawby.  
B6—United States Patent No. 1,065,494—Anderson.  
B7—United States Patent No. 1,536,874—Bates.  
B8—United States Patent No. 1,379,136—Summers, et al.
- C. Copies of patents showing prior art:
- C1—United States Patent No. 105,027—Belfield.  
C2—United States Patent No. 127,768—Hewes.  
C3—United States Patent No. 233,180—Allt.  
C4—United States Patent No. 286,656—Van Wie.  
C5—United States Patent No. 494,579—Lunken.  
C6—United States Patent No. 494,581—Lunckenheimer.  
C7—United States Patent No. 494,582—Lunckenheimer.  
C8—United States Patent No. 985,444—Patterson.  
C9—United States Patent No. 1,179,047—Snow.  
C10—United States Patent No. 1,483,041—Brooks.  
C11—United States Patent No. 1,751,122—Barker.  
C12—German Patent No. 17,094 (1882)—Heinecke.  
C12t—Translation of specification of German Patent No. 17,094 Heinecke.

D. Reserved for chart showing valves of Smith patent, Defendant, and prior art patents.

E. Catalogue of Smith Valve Company.

F. Photographs (F1, F2, F3) showing gate valve as manufactured by defendant, Fabri-Valve Company of America.

G. Blue print showing gate valve as manufactured by defendant, Fabri-Valve Company of America, Group 301 3" Bonnet Stock Valve.

H. Reserved for actual sample of valve shown in blue print (G).

I. Reserved for wood model of valve shown in German Patent No. 17,094 Heinecke.

J. Reserved for actual sample of bonnetless type, split casing, flared inlet port stock valve.

K. Reserved for blue prints (4 sheets) of 14" gate valve manufactured and sold by Fabri-Valve Co.

L. Reserved for catalogue issued by Fabri-Valve Co.

M. United States Patent No. 2,000,853—Lange.

The parties hereto agree to the foregoing pretrial order and the court being fully advised in the premises;

Now Orders that the foregoing pretrial order shall not be amended except by consent of both parties or to prevent manifest injustice, and that said pretrial order supersedes all pleadings; and

It Is Further Ordered that upon the trial of this case no proof shall be required as to matters of fact hereinabove specifically found to be admitted but

that proof upon the issues of fact and law by the plaintiff and the defendant as hereinabove stated shall be had.

Dated at Portland, Oregon, this 28th day of March, 1951.

/s/ GUS J. SOLOMON,  
United States District Judge

Approved:

/s/ HAROLD D. COOK,  
Attorneys for Plaintiffs  
/s/ E. A. BUCKHORN,  
Attorneys for Defendant

[Endorsed]: Filed March 28, 1951.

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[Title of District Court and Cause.]

### ORAL OPINION

December 31, 1952

Neither in the pretrial order nor in the briefs by either plaintiff or defendant was the issue of validity of the Smith patent raised. Defendant, in its opening brief, stated, "The single issue involved is whether or not any or all of the claims 1, 2, 3, 5 and 6 of the Smith patent are infringed by either or both of the valves, type A or type B, as manufactured by the defendant."

Validity having been conceded or at least assumed by the defendant, I shall, for the purposes of this case, make the same assumption and confine my

remarks to the question of infringement. Royal Typewriter Co. vs. Remington Rand, 168 F.2d 691.

Defendant contends that the file wrapper of the Smith patent, as well as the prior art patents introduced in evidence by the defendant, show that the Smith patent was a very narrow one covering a minor improvement in a highly developed art. He also contends that Smith, in the prosecution of his patent before the Patent Office, abandoned broad claims which had been rejected and, in order to obtain a patent, substituted narrower claims containing express limitations. He therefore contends that the doctrine of equivalency may not be invoked to avoid the express limitations contained in the claims as granted.

I find that Claims 1, 2, 5 and 6 all provide for cavities at the bottom of the side wall on the inlet side. Examination of the drawings and the original description reveals that the word "cavities" is not synonymous with the words "recess in the floor of said housing" which is designated by the letter "j". The cavities, although not defined in the description, are referred to in the drawing by the letter, "m".

The accused machines have recesses but do not have cavities and I therefore find that claims 1, 2, 5 and 6 have not been infringed.

Claim 3 does not provide for cavities but it does provide for the "lower end of said opening formed V shape."

The defendant contends that the presence of the V shape in the accused machines is essential in order to constitute infringement because of a file wrapper estoppel which precludes plaintiff from relying on the doctrine of equivalents.

In my opinion, the arguments of the lawyer for the patentee in connection with original Claims 6, 7 and 8 and his attempt to distinguish Gill and Hedrick do not constitute file wrapper estoppel.

The difference between "V" and "U" is so small that, even though plaintiff is entitled to the narrowest range of equivalents, a "U" shaped opening should be declared to be the equivalent of a "V" shaped opening particularly in view of the fact that the accused machines with the "U" shape attain substantially the same result in substantially the same way. Historically, the letter "U" and the letter "V" were used interchangeably and, according to Webster's New International Dictionary, "In dictionaries of English, capital U and V were not given separate alphabetical positions until about 1800." Even today, on inscriptions on public buildings and elsewhere, we often see the letter "V" used as a "U". In my opinion, therefore, the accused machines infringe Claim 3 of the Smith patent.

I suggest a conference on Monday, January 12, at 11 a.m. to consider the other issues in the case.

[Title of District Court and Cause.]

## ORAL OPINION

June 17, 1953

I have heretofore held that the defendant's gate valves do not infringe claims 1, 2, 5 and 6 of the Smith patent, but do infringe claim 3. In making this determination, I assumed validity because the patent had expired and because neither the answer nor the pretrial order raised that question.

Plaintiffs do not, and for some years have not, manufactured gate valves covered by the Smith patent. Instead, in 1938 and 1939, they entered into licensing agreements with the American and Canadian Crane Companies for the manufacture, sale and distribution of such valves, except in ten named western states, on a 5% royalty basis.

In 1945, plaintiffs licensed the Western Machinery Co. for the territory not covered by the Crane licenses. The licensee agreed to pay a 12½% royalty but, as part of such contract, plaintiffs furnished it with drawings, specifications and patterns.

Plaintiffs' evidence on damages was limited to the introduction in evidence of these contracts and a statement furnished by the defendant of the number and total dollar volume of the sale of the various types of gate valves manufactured by defendant which plaintiffs contended infringed the Smith patent.

The defendant's valves are not Chinese copies of

the patented structure. They do not have the cavities which are an essential element in the claims which I found were not infringed.

Claim 3 does not provide for cavities. However, it does call for the "lower end of said opening formed V-shape." Although the V-shape was the preferred embodiment of this structure and although the file wrapper shows that emphasis was placed upon such shape, I found that the U-shape or round opening obtained substantially the same result in substantially the same way and that plaintiffs, even though entitled to a very narrow range of equivalents, were entitled to claim that the patented structure included a U-shape as well as a V-shape opening.

There was no evidence of the impact of the manufacture and sale by the defendant on the patented structure and no expert testimony on what would be a reasonable royalty for the accused valves.

The statute relative to damages (Title 35 USCA 283) requires "upon finding for the claimant, the court shall award the claimant damages adequate to compensate for the infringement but in no event less than the reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court."

Ordinarily the court would consider other contracts entered into by the claimant as a proper standard upon which to determine a reasonable royalty. In this case, however, in view of the facts hereinbefore set forth and the fact that the patented structure represented only a minor improve-

ment in a highly developed art, I find that a reasonable royalty is 1½% of the total sales price of all the valves manufactured and sold by defendant between April 13, 1950, and May 14, 1952, which, according to my calculations, amounts to \$2,962.16.

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[Title of District Court and Cause.]

## FINDINGS OF FACT AND CONCLUSIONS OF LAW

Pursuant to Rule 52 of the Rules of Civil Procedure, this cause having come on for trial before this Court on March 28, 1951, before the Honorable Gus J. Solomon, District Judge, and plaintiffs and defendant having presented their evidence and having presented briefs in support of their respective contentions, and the matter having been further argued before this Court on January 26, 1953, and this Court having directed plaintiffs to prepare Findings of Fact and Conclusions of Law, the same are hereby adopted by the Court as its Findings of Fact and Conclusions of Law pursuant to Rule 52 of the Rules of Civil Procedure:

### Findings of Fact

#### I.

This is a civil action for patent infringement in which The United States National Bank of Portland, Oregon, Trustee, a national banking associa-



tion with its principal office and place of business in the City of Portland, State of Oregon, and Walter G. E. Smith, the inventor of the patent in suit, are plaintiffs and Fabri-Valve Company of America, an Oregon corporation, having its office and place of business in the City of Portland, State of Oregon, is defendant and is charged with infringement of United States Letters Patent No. 2,001,271, issued May 14, 1935, to Walter G. E. Smith.

## II.

On December 3, 1930, Walter G. E. Smith filed in the United States Patent Office an application for Letters Patent, Serial No. 499,709, for an improvement in gate valve, and on May 14, 1935, Letters Patent No. 2,001,271 was granted to the said Walter G. E. Smith for said invention.

## III.

Plaintiff, United States National Bank of Portland, Oregon, is the owner, by mesne assignment, of the entire right, title and interest in and to the patent in suit and of the sole right to recover for all infringements thereof.

## IV.

On April 13, 1950, plaintiffs, by their attorneys, notified defendant in writing that valves manufactured and sold by Fabri-Valve Company of America infringe Letters Patent No. 2,001,271, to Walter G. E. Smith, for Gate Valve. Said written notice was sent to defendant, Fabri-Valve Company of

America, by registered mail, and acknowledged to have been received by it on April 14, 1950.

## V.

The gate valve disclosed in the patent in suit, as well as the gate valves manufactured by the defendant and charged to be an infringement of the patent, are designed particularly for use in pulp mills and more particularly for controlling the flow of pulp stock through pipelines. The valves consist essentially of a valve body having inlet and outlet ports, the side walls of the valve body being provided with passageways for slidably receiving a gate movable in a direction at right angles to the direction of fluid flow through the ports.

## VI.

The gate valve as disclosed in the patent in suit is provided with a rectangular gate, the opposite side edges of which are arranged for sliding movement within cooperating parallel grooves formed in opposite side walls of the valve body in the central portion thereof. The square lower end of the gate is provided with a beveled or knife edge which slides against a transverse wall provided on the face of the outlet section of the valve body. An opening is formed in this transverse wall and is V-shaped at the lower end thereof as illustrated more clearly in the right-hand view of Figure 5 of the patent drawings and the transverse wall is defined in part by the portions 1'. The gate in being moved to the closed position is supported at its lower end by the trans-

verse wall portions marked 1' against the thrust of the pressure of the inlet fluid. Moreover, the knife edge provided at the lower end of the rectangular gate scrapes away any pulp stock or other material which may collect on the face of the wall and prevents such material from interfering with the operation of the gate. Cavities marked by the reference characters m are provided in the opposite side walls of the valve body on the inlet side of the gate and communicate with the lower ends of the gate grooves for receiving material which will be forced downwardly in the grooves as the gate is moved to the closed position.

#### VII.

Two different types of valves manufactured by defendant are complained of. The first valve, which has been referred to as Type A, shown in defendant's Exhibit D, Plate 2, is provided with a cylindrical body and both the inlet and outlet ports are of circular shape. The gate plate which is mounted for sliding movement in cooperating passageways provided in the valve body is semicircularly curved at the bottom. The semicircular lower end of the gate plate is beveled for the purpose of scraping accumulated pulp stock from the face of the seating ledge provided for the gate.

#### VIII.

The second of defendant's valves, which has been designated as the Type B valve, is illustrated in defendant's Exhibit D, plate 3. This valve differs from the Type A valve in that it is of the bonnetless type

whereas the Type A is of the bonnet type, and instead of having a one-piece housing, as in the case of the Type A valve, the Type B valve includes a two-part housing. The two parts are bolted together with an intermediate spacer so as to provide passageways in the opposite side walls for cooperatively receiving a vertically slidable gate plate, the lower end of which is semicircularly curved and provided with a beveled edge. As in the case of the Type A valve, the outlet port of this valve is of circular form.

### IX.

Defendant's valves are provided with a seating ledge extending around the full circle of the valve housing, which seating ledge forms the outlet side of the groove in which the gate slides and which supports the gate against the thrust of the pressure of the inlet fluid while the gate is being closed. The wall of the groove on the inlet side is cut away across the floor of the valve housing so that any pulp stock which accumulates in the groove and which is moved out of the groove by the descending gate and onto the floor of the housing will be carried away by the flow of material through the valve when the gate is opened.

### X.

In defendant's gate valve bonnet Type A, as exemplified by defendant's Exhibit No. D—Plate 2, defendant uses a metal ring welded to and extending around the full circle of the valve housing and providing the outlet side of the guide groove and

the seating ledge for the gate. In defendant's gate valve bonnetless Type B, as exemplified in defendant's Exhibit No. D—Plate 3, the inside diameter of the outlet port is less than the inside diameter of the inlet port, and the end face of the outlet port forms the outlet side of the guide groove and the seating ledge for the gate.

## XI.

Gate valves were highly developed by the prior art more than one year prior to the filing of the application which matured into the Smith patent in suit. The defendant's valves are not exact copies of the patented structure. With reference to claims 1, 2, 5 and 6 of the patent in suit, it is noted that these are all specifically limited to a gate valve structure in which the side walls of the valve body on the inlet side of the gate are provided with cavities communicating with the bottom of the gate passageways or grooves. Such cavities are provided for the express purpose of receiving pulp material which may accumulate in the gate grooves during the opened condition of the gate, which accumulation will be forced downwardly into the cavities as the gate is moved toward the closed position. Such cavities are shown in the drawings of the Smith patent, Figures 1, 3 and 5, and are marked by the reference character *m*. Such cavities are essential elements in the claims 1, 2, 5 and 6 and since they are not present in the valves manufactured by defendant, I find that these claims are not infringed.

## XII.

Claim 3 does not call for the provision of the cavities referred to in the preceding paragraph. However, it does call for the "lower end of said opening formed V-shaped". Although the V-shape was the preferred embodiment of this structure and although the file wrapper shows that emphasis was placed upon such shape, I found that the U-shape or round opening obtained substantially the same result in substantially the same way and that plaintiffs, even though entitled to a very narrow range of equivalents, was entitled to claim that the patent structure included a U-shape as well as a V-shape opening. Accordingly, I find that claim 3 of the Smith patent is infringed by both of defendant's valves.

## XIII.

On the matter of damages, ordinarily the Court would consider other contracts entered into by the claimants as a proper standard upon which to determine a reasonable royalty. In this case, however, in view of the facts hereinbefore set forth and the fact that the patented structure represented only a minor improvement in a highly developed art, I find that a reasonable royalty is one and one-half per cent of the total sales price of all the valves manufactured and sold by defendant between April 13, 1950 and May 14, 1952, which, according to my calculations, amounts to \$2,962.16.

## XIV.

Upon introduction of the gate valve of the Smith

patent in suit, the pulp and paper industry extensively adopted the invention of the Smith patent, and the invention of the Smith patent has been extensively recognized in the industry as a new, novel and useful invention prior to the filing of the complaint in this suit.

XV.

Long prior to the commencement of the acts of defendant herein complained of, plaintiffs had given and granted to Crane Company of Chicago, Illinois, the exclusive right, license and privilege to manufacture, use and sell gate valves embodying and employing the inventions disclosed, described and claimed in the Smith patent, No. 2,001,271, throughout the United States of America, save and except in the eleven Western States; plaintiffs had given and granted to Western Machinery Company of Portland, Oregon, the exclusive right, license and privilege to manufacture, use and sell gate valves embodying and employing the inventions disclosed, described and claimed in said patent, No. 2,001,271, throughout the eleven Western States of the United States of America; and plaintiffs had given and granted to Crane Company, Ltd., of Canada, the exclusive right, license and privilege to manufacture, use and sell gate valves embodying and employing the inventions disclosed, described and claimed in the Smith patent, No. 2,001,271, throughout the Dominion of Canada; and each and every one of the aforementioned licenses required payment to plaintiffs as licensors of a royalty or license

fee equal to five per cent (5%) of the total sales price of gate valves covered by said license.

#### XVI.

The three licensees to whom licenses were granted under the Smith patent have assumed the patent to be valid, have respected plaintiffs' rights therein, and have continued to pay the required license fees up to the date of expiration of the patent, notwithstanding defendant's infringement thereof; and the gate valve disclosed, described and claimed in the Smith patent No. 2,001,271 has had wide commercial success.

#### XVII.

The Smith patent in suit, No. 2,001,271, expired May 4, 1952, during the pendency of this suit.

#### XVIII.

Subsequent to April 13, 1950, and prior to May 14, 1952, defendant manufactured, sold and/or used a total of 450 gate valves embodying and employing the inventions disclosed, described and claimed in the Smith patent in suit and as defined by claim 3 of said Letters Patent, and that the total sales price of said gate valves manufactured and sold by defendant during said period was \$197,476.73.

#### XIX.

Plaintiffs licensed manufacturers of gate valves under the Smith patent in suit, Crane Company of America at Chicago, Illinois, Crane Company of Canada at Montreal, Canada, and Western Ma-



chinery Company at Portland, Oregon, which were the only manufacturers of the patented gate valve other than the defendant, all at the same royalty of five per cent (5%) of the total sales price of said gate valves.

XX.

Plaintiff, Walter G. E. Smith, granted and conveyed to Western Machinery Company of Portland, Oregon, the right, license and privilege to use drawings, patterns, specifications, and other data applicable to the manufacture of gate valves under the Smith patent in suit, for a rental or royalty of seven and one-half per cent (7½%) of the sales price of all gate valves manufactured and sold by said Western Machinery Company during the life of the Smith patent.

XXI.

In addition to the reasonable royalty, plaintiffs are entitled to recover from defendant their costs in this suit, taxed at \$.....

XXII.

Plaintiffs are entitled to recover from defendant interest on the amount of damages herein awarded to plaintiffs in the principal sum of \$2962.16 at the rate of six per cent (6%) per annum from May 14, 1952 until paid; and interest on the costs taxed in this suit in the principal sum of \$..... at the rate of six per cent (6%) per annum from the date on which the judgment is entered in this cause until paid.

## Conclusions of Law

## I.

Claims 1, 2, 5 and 6 of the patent in suit No. 2,001,271—Smith are not infringed by the defendant.

## II.

Claim 3 of the patent in suit No. 2,001,271—Smith is infringed by both of the valves manufactured and sold by defendant, identified as the Bonnet Type A Gate Valve, exemplified by defendant's Exhibit D, Plate 2, and Bonnetless Type B Gate Valve, exemplified by defendant's Exhibit D, Plate 3.

## III.

Plaintiffs are entitled to a judgment against defendant for damages in the sum of \$2,962.16, together with interest thereon at the rate of six per cent per annum from May 14, 1952, until paid.

## IV.

Plaintiffs are entitled to recover from defendant their costs heretofore taxed by the Clerk of this Court in the amount of \$....., together with interest thereon at the rate of six per cent (6%) per annum from the date on which the judgment is entered in this cause until paid.

Dated April 15, 1954.

/s/ GUS J. SOLOMON,

United States District Judge

[Endorsed]: Filed April 15, 1954.

In the District Court of the United States for the  
District of Oregon

Civil No. 5783

THE UNITED STATES NATIONAL BANK OF  
PORTLAND, OREGON, TRUSTEE, and  
WALTER G. E. SMITH, Plaintiffs,

vs.

FABRI-VALVE COMPANY OF AMERICA, a  
Corporation, Defendant.

### JUDGMENT

This cause having come on to be heard, and the Court having made and entered its Findings of Fact and Conclusions of Law pursuant to Rule 52 of the Rules of Civil Procedure, it is hereby Adjudged and Decreed as follows:

#### I.

That plaintiff, The United States National Bank of Portland, Oregon, Trustee, is the owner of the entire right, title and interest in and to United States Letters Patent No. 2,001,271, granted May 14, 1935, to Walter G. E. Smith, for Gate Valve, together with any and all rights of action, claims or demands arising out of, or accruing from past infringement thereof.

#### II.

That defendant has infringed United States Letters Patent No. 2,001,271, and particularly claim

3 thereof, by the manufacture and sale of gate valves as exemplified by defendant's gate valve bonnet Type A and by defendant's gate valve bonnetless Type B, as shown and illustrated by defendant's Exhibit D, Plates 2 and 3, respectively.

### III.

That plaintiffs have and recover from defendant general damages which shall be due compensation for the making, using and/or selling of the combination of the inventions of the Letters Patent in suit, which damages shall be in the principal sum of \$2,962.16, together with interest thereon at the rate of six per cent (6%) per annum from May 14, 1952, until paid.

### IV.

That plaintiffs have and recover from defendant the taxable costs of the plaintiffs in this Court in the principal sum of \$107.85, together with interest thereon at the rate of six per cent (6%) per annum from the date on which judgment is entered in this cause until paid.

Dated at Portland, Oregon, April 15, 1954.

/s/ GUS J. SOLOMON,

United States District Judge

[Endorsed]: Filed and Entered April 15, 1954.

[Title of District Court and Cause.]

NOTICE OF APPEAL

Notice is hereby given that the United States National Bank of Portland, Oregon, Trustee, and Walter G. E. Smith, plaintiffs above named, hereby appeal to the United States Court of Appeals for the Ninth Circuit from the final judgment entered in this action on April 15, 1954, and more particularly from that portion of said final judgment which says:

III.

“That plaintiffs have and recover from defendant general damages which shall be due compensation for the making, using and/or selling of the combination of the inventions of the Letters Patent in suit, which damages shall be in the principal sum of \$2,962.16, together with interest thereon at the rate of six per cent (6%) per annum from May 14, 1952, until paid.”

Dated at Portland, Oregon, this 12th day of May, A. D. 1954.

THE UNITED STATES NATIONAL  
BANK OF PORTLAND, OREGON,  
Trustee, and WALTER G. E. SMITH,  
Appellants,

By COOK AND SCHERMERHORN,

/s/ By HAROLD D. COOK

Their Attorneys

[Endorsed]: Filed May 13, 1954.

[Title of District Court and Cause.]

### UNDERTAKING ON APPEAL

Whereas, The United States National Bank of Portland, Oregon, Trustee, a national banking association with its principal office and place of business in the City of Portland, State of Oregon, and Walter G. E. Smith, plaintiffs in the above entitled action, appeal to the United States Court of Appeals for the Ninth Circuit from a judgment in favor of plaintiffs made and entered herein on the 15th day of April, 1954, in the sum of Two Thousand, Nine Hundred Sixty-Two and 16/100 Dollars (\$2,962.16), together with interest thereon at the rate of six per cent (6%) per annum from May 14, 1952, until paid, together with plaintiffs' costs in the principal sum of One Hundred Seven and 85/100 Dollars (\$107.85), together with interest thereon at the rate of six per cent (6%) per annum from the date of entry of said judgment until paid:

Now, Therefore, in consideration of the premises and of such appeal, we, The United States National Bank of Portland, Oregon, Trustee, a national banking association with its principal office and place of business in the City of Portland, State of Oregon, and Walter G. E. Smith, appellants, and Fidelity and Deposit Company of Maryland, a corporation organized and existing under and by virtue of the laws of the State of Maryland and authorized and licensed to become surety on bonds and undertakings in the State of Oregon, do hereby jointly and severally undertake and promise on the

part of appellants that said appellants will pay all damages, costs and disbursements if the appeal is dismissed or the judgment affirmed, or which may be awarded against them on the appeal if the judgment is modified; provided, however, that said costs and disbursements shall not exceed the sum of \$250.00.

Now the condition of this obligation is such, that if the said The United States National Bank of Portland, Oregon, Trustee, and Walter G. E. Smith, appellants, shall jointly or severally make payment of the costs if the appeal is dismissed or the judgment affirmed, or such costs as the United States Court of Appeals for the Ninth Circuit may award if the judgment is modified, then this obligation to be void; otherwise to remain in full force and effect.

Sealed with our seals and dated this 12th day of May, 1954.

THE UNITED STATES NATIONAL  
BANK OF PORTLAND, OREGON,  
TRUSTEE,

/s/ By R. M. ALTON,  
Vice President and Trust Officer  
Principal

/s/ WALTER G. E. SMITH, Principal

FIDELITY AND DEPOSIT COM-  
PANY OF MARYLAND,

[Seal] /s/ CLARENCE D. PORTER,  
Attorney in Fact  
Surety

Approved:

/s/ GUS J. SOLOMON,  
United States District Judge

Duly Verified.

[Endorsed]: Filed May 13, 1954.

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[Title of District Court and Cause.]

### NOTICE OF APPEAL

Notice is hereby given that Fabri-Valve Company of America, defendant above named, hereby appeals to the United States Court of Appeals for the Ninth Circuit from the final judgment entered in this action on April 15, 1954.

/s/ ELMER A. BUCKHORN,  
/s/ W. B. SHIVELY,  
Attorneys for Defendant

[Endorsed]: Filed May 14, 1954.

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[Title of District Court and Cause.]

### UNDERTAKING ON APPEAL SUPERSEDEAS

Whereas, the Fabri-Valve Company of America, Defendant in the above entitled suit appeals to the United States Court of Appeals for the Ninth Circuit from a final judgment made and entered against the Defendant in the said suit in the said



District Court of the United States for the District of Oregon, in favor of the Plaintiff in the said suit and against the Defendant on the 15th day of April, A.D. 1954, for Three Thousand Five Hundred and no/100 Dollars (\$3,500.00) damages and costs and disbursements.

Now, Therefore, in consideration of the premises, and of such appeal, the undersigned, Glens Falls Indemnity Company, a corporation empowered under the laws of the State of Oregon to become surety upon bonds, undertakings, etc., in the State of Oregon, does hereby undertake and promise, on the part of the appellant, that the said appellant will pay all damages, costs and disbursements which may be awarded against Fabri-Valve Company of America on the appeal.

And, Whereas, the appellant is desirous of staying the execution of the said final judgment so appealed from, it does further, in consideration thereof, and of the premises, undertake and promise that if the said final judgment appealed from, or any part thereof, be affirmed, the appellant will satisfy it so far as affirmed.

GLENS FALLS INDEMNITY  
COMPANY,

[Seal] /s/ J. STUART LEAVY, Attorney

Countersigned:

JEWETT, BARTON, LEAVY &  
KERN,

/s/ J. STUART LEAVY,  
Resident Agents

Approved:

/s/ GUS J. SOLOMON

[Endorsed]: Filed May 14, 1954.

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[Title of District Court and Cause.]

### STATEMENT OF POINTS ON APPEAL

1. The District Court erred in holding claim 3 of the Smith patent infringed by defendant's gate valves.

/s/ E. A. BUCKHORN,  
Of Attorneys for Defendant

Acknowledgment of Service attached.

[Endorsed]: Filed June 8, 1954.

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[Title of District Court and Cause.]

### PLAINTIFFS-APPELLANTS STATEMENT OF POINTS ON APPEAL

1. The District Court erred in holding that cavities provided for the express purpose of receiving pulp material which may accumulate in the gate grooves during the opened condition of the gate, which accumulation will be forced downwardly into the cavities as the gate is moved toward the closed position, are not present in the valves manufactured by defendant.

2. The District Court erred in holding claims 1,

2, 5 and 6 of the Smith patent in suit not infringed by valves manufactured and sold by defendant.

3. The District Court erred in holding that the patented structure of the Smith patent in suit represented only a minor improvement in a highly developed art.

4. The District Court erred in holding that plaintiffs were entitled to receive as damages royalties computed at a rate of no more than one and one-half per cent of the total sales price of all the valves manufactured and sold by defendant between April 13, 1950 and May 14, 1952, which royalties at such rate amount to \$2962.16.

5. The District Court erred in refusing to find that plaintiffs were entitled to receive as damages a royalty computed at the rate of five per cent of the total sales price of all the valves manufactured and sold by defendant between April 13, 1950 and May 14, 1952, which is the royalty established by all licenses given and granted prior to the commencement of the acts of defendant complained of.

6. The District Court erred in refusing to find that plaintiffs were entitled to receive as damages additional royalties computed at the rate of seven and one-half per cent of the total sales price of all the valves sold by defendant in the eleven Western states between April 13, 1950 and May 14, 1952, in direct and unlawful competition with plaintiffs' licensee, Western Machinery Company.

7. The District Court erred in refusing to use plaintiffs' established royalty as the measure of

damages to be assessed against defendant for infringement of the Smith patent in suit.

THE UNITED STATES NATIONAL  
BANK OF PORTLAND, OREGON,  
Trustee, and WALTER G. E. SMITH  
Plaintiffs-Appellants

By COOK AND SCHERMERHORN,  
/s/ By HAROLD D. COOK,  
Of Attorneys for Plaintiffs-Appellants

Acknowledgment of Service attached.

[Endorsed]: Filed June 14, 1954.

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[Title of District Court and Cause.]

### CERTIFICATE OF CLERK

United States of America,  
District of Oregon—ss.

I, F. L. Buck, Acting Clerk of the United States District Court for the District of Oregon, do hereby certify that the foregoing documents consisting of Complaint; Answer; Pre-trial order; Copy of oral opinion dated December 31, 1952; Copy of oral opinion dated June 17, 1953; Findings of fact and conclusions of law; Judgment; Notice of appeal by U. S. National Bank and Walter G. E. Smith; Undertaking on appeal; Notice of appeal by Fabri-Valve Company; Undertaking on appeal; Defendant's statement of points on appeal; Designation of

record by appellee and cross-appellant; Plaintiffs-appellants statement of points on appeal; Designation of record by plaintiffs-appellants; Order extending time to file record on appeal and Transcript of docket entries constitute the record on appeal from a judgment of said court in a cause therein numbered Civil 5783, in which The United States National Bank of Portland, Oregon, Trustee, and Walter G. E. Smith are plaintiffs and appellants and Fabri-Valve Company of America, a corporation is defendant and appellee; that the said record has been prepared by me in accordance with the designations of contents of record on appeal filed by the appellants and appellee, and in accordance with the rules of this court.

I further certify that there is enclosed herewith a copy of portions of transcript of testimony furnished by plaintiffs-appellants. The following exhibits are being forwarded under separate cover by the attorneys for appellees: Plaintiffs' exhibits 1 to 3, 5 to 7, 11 to 14 and 21; Defendant's exhibits A to E, F1 to F3, F and G, I and M.

I further certify that the costs of filing the notices of appeal \$5.00 each have been paid by the appellants and the appellee.

In Testimony Whereof I have hereunto set my hand and affixed the seal of said court in Portland, in said District, this 9th day of July, 1954.

[Seal]            /s/ F. L. BUCK, Acting Clerk

In the District Court of the United States for the  
District of Oregon

No. Civ. 5783

THE UNITED STATES NATIONAL BANK OF  
PORTLAND, OREGON, TRUSTEE, and  
WALTER G. E. SMITH, Plaintiffs,

vs.

FABRI-VALVE COMPANY OF AMERICA, a  
Corporation, Defendant.

### TRANSCRIPT OF PROCEEDINGS

The above-entitled case came on regularly for trial before the Honorable Gus J. Solomon of the above-entitled Court on Wednesday, March 28, 1951, beginning at the hour of 10:00 a.m., at the United States Court House, City of Portland, State of Oregon.

Appearances: Messrs. Harold L. Cook and Arthur S. Vosburg, attorneys for the plaintiffs. Messrs. W. B. Shively and Elmer A. Buckhorn, attorneys for the defendant. [1\*]

#### HAROLD S. HILTON

called as an adverse witness by the plaintiff's having been first duly sworn to tell the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

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\* Page numbers appearing at top of page of original Reporter's Transcript of Record.

(Testimony of Harold S. Hilton.)

Direct Examination

By Mr. Cook:

\* \* \* \* \* [33]

The Court: It is Defendant's Exhibit G. I don't think there is any dispute as to the fact that the defendant manufactures the two types of valves about which the complaint is being made.

Mr. Vosburg: No, no dispute at all.

Q. (By Mr. Cook): When did Fabri-Valve Company of America first start to manufacture this type of valve?

A. We made some experimental ones in the latter part of 1948 and for production, the latter part of 1949.

Q. What has been the principal use of the valves manufactured and sold by your company?

A. Use in pulp stock lines in the paper mills.

Q. On the lower half of the inside of the folder identified as Plaintiffs' Exhibit 11, is what is referred to there as paper stock valve, bonnetless type. Will you describe the construction of that valve?

A. Yes, it is a fabricated structure made of an inlet and an outlet body if those are body halves, and a spacer in between. The spacer is to accommodate the plate gate. [35]

Q. Do the halves of the body, the split halves of the body and the spacer plates together constitute a groove or guide-way in which the gate is raised and lowered?

A. They do down to a tangent on the side, just

(Testimony of Harold S. Hilton.)

a short section do they actually make a guide groove. The rest would be a guide of the plates themselves, the upper end of the body. There is a ring formed by the seat on the outlet side which acts as a guide under pressure, and the ring—I should say and a portion of the inlet body around to a tangent on the side also is incorporated, I suppose, in guiding the plate down. [36]

\* \* \* \* \*

Mr. Cook: We are offering them now, your Honor, to place them of record. They show public acceptance of Plaintiffs' valve structure. They show it is produced both in this country and in Canada. The fact that it has been accepted and is in use from its very inception to the present moment, more than a period of 20 years, is to show, has a great deal to do with that bit of Patent Law which says that public use and public acceptance, commercial use shows—

The Court: Maybe Mr. Buckhorn will stipulate to that. Will you stipulate that the valve produced by the plaintiff is in wide use and sold in the United States and Canada in quantity?

Mr. Buckhorn: That's right, we stipulate to that.

Mr. Cook: And that it is in use at the present time?

Mr. Buckhorn: That it is in use at the present time.

Mr. Cook: And ever since its inception has been?



(Testimony of Harold S. Hilton.)

Mr. Buckhorn: Well, I couldn't prove that. I wouldn't stipulate [39] as to that.

Mr. Cook: Even though it is in use at the present time?

Mr. Buckhorn: Yes.

The Court: Well, you can have Mr. Smith testify that it has been in use ever since it has been manufactured many years ago.

Well then, all of the Plaintiffs' Exhibits with the exception of 15, 16, 17, 18, 19, and 20 are admitted.

(Thereupon the Plaintiffs' Exhibits above referred to, previously marked for identifications, Exhibits 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, were received in evidence.)

The Court: The defendant stipulates that the valve produced by the plaintiff is now in widespread use in the United States and Canada. Now, Defendant's Exhibits. Mr. Cook, how about Exhibit A?

Mr. Cook: No objection, your Honor.

The Court: Exhibit B?

Mr. Cook: No objection.

The Court: C, any objection to C? [40]

\* \* \* \* \*

Q. (By Mr. Cook): Mr. Hilton, I believe you and I had gotten along to where you were describing one of the defendant's valves, and the particular valve in description was the bonnetless type stock valve having a split housing, half of which comprised an inlet port and half outlet port with

(Testimony of Harold S. Hilton.)

a spacer plate there between, and the adjacent parts of the housing and the spacer plates provided a groove or guide-way for the gate. And then when the gate [45] entered the through way of the valve, that is, the pipe, through way of the valve, the groove was taken up, and the function of the groove was taken up by inset rings; is that what you testified to?

A. The function of what? I didn't quite——

Q. I say, that the job of the groove, the function of the groove as provided by the two halves of the housing within the through way of the valve, the job of providing the groove for the gate was taken by rings inset in the pipeline?

A. Yes, there is a ring on the outside, on the outlet side all the way around to form a seat on the outlet side.

Q. And on the inlet side?

A. It does not go all the way around.

Q. There is a ring there, but it is cut away at the bottom?      A. That is correct. [46]

\* \* \* \* \*

Q. Is there a seating ledge or an equivalent structure in all of the valves manufactured by Fabri-Valve Company?

A. Yes, there is a seating—there is a seat on all of the outlet [50] ports.

Q. What is the function of that seating ledge?

A. To give a landing for the plate gate in the closed position.

Q. That is to take the thrust of the pressure of

(Testimony of Harold S. Hilton.)

the inlet fluid?           A. Well, yes, that's right.

Q. Is that right?           A. That is correct.

Q. That valve does not employ a wall on the inlet side of the groove for the gate; is that true?

A. How was that now?

Q. I say, that valve, being Valve No. 1063, of which this is a model, does not employ a wall on the inlet side of the groove for the gate at the bottom of the valve?

A. Oh, you mean in this position here?

Q. That's right.           A. No, it does not.

Q. Do any of the Fabri-Valve Company valves employ the double walled groove at the bottom of the valve?           A. Only the wedge gates.

Q. Only the wedge gates. Those valves are not valves which are involved in this suit; is that right?

A. No.

Q. I notice the inlet floor, the floor of the inlet side of the housing in that valve, slopes toward the base of what we call the transverse wall in the Smith Patent? [51]           A. Yes.

Q. For what purpose?

A. Well, that is to allow for a landing on the outlet of the valve, and also to coincide with the spacer ring so that it will be flush with the spacer ring and will not leave a groove to collect whatever material the pipe is carrying so that it will enable it to close at all times.

Q. By a landing do you mean a seat for the gate?           A. Yes.

Q. In that valve does the groove in which the

(Testimony of Harold S. Hilton.)

gate slides come to infinity, that is, does it come out to nothing adjacent to the floor of the valve?

A. I don't quite follow you.

Q. Does your groove end adjacent the floor of the valve?

A. No, it ends up on the side, up closer to the center line.

Q. On each side of the valve?

A. Yes, uh-huh.

Q. So that the grooves for the gate disappear?

A. That's right.

Q. In the side walls of the valve?

A. Correct.

Q. What happens to the material which is lodges in those grooves during the flow of materials through the valves?

A. Well, some of it comes out, I suppose.

Q. Are you familiar with the operation of these valves? [52]

A. Yes.

Q. Is it true that during the operation of the valve fibrous pulp fibers will collect in that groove?

A. Yes.

Q. And then during the closure of the gate what happens to that material?

A. Well, some of it is pushed ahead of the gate out of the closure, out of the guide. Some of it passes on up into the body.

Q. What do you mean, some of it passes on up into the body?

A. Well, I mean there is enough clearance here that some of it goes up against the packing.

(Testimony of Harold S. Hilton.)

Q. You mean such bonnet as there is on this type of valve can fill up with pulp fibers?

A. Well, any place that there is an opening I would say that the liquid would carry some of the fibers up into it, yes.

Q. And some of the fibers, you say, which collects in the groove is pushed ahead of the gate and out of the groove and onto the floor of the valve; is that correct?

A. Well, it would have to close the valve, yes.

Q. Do you provide your sloping floor on the inlet side as a recess then to catch that material scraped out of this groove?

A. Not particularly to catch what is scraped out but to keep what might collect on the bottom from building up so that it will not shut, so that you cannot shut the valve.

Q. How do you reflect that? Would you explain that a little more? [53]

A. Well, if the line is a horizontal position and it remains at rest for any length of time or any of it settles out, why, it's straight through here. This gives it a chance to seat, yes.

Q. Well, I am not certain that I understand your answer yet as to the purpose of your downwardly sloping inlet floor where it slopes down to the bottom of your transverse wall.

A. Well, that is so that it will not trap any material in between the two seats like a wedge gate, as you have indicated, and build it up so you cannot shut it.

(Testimony of Harold S. Hilton.)

Q. Is it true, Mr. Hilton, that in the conventional type gate valve where the gate seats in a groove having two side walls that the groove will fill with pulp material?

A. Yes, any time there is a two seats as such with a wide gate on the bottom it will build up and then—that's just natural for that to do that. [54]

\* \* \* \* \*

Q. Is that gate in that valve supported against the thrust of the inlet pressure when the gate is closed?

A. You mean in this position? (Indicating.)

Q. In the closed position.

A. Is it supported against the outlet body?

Q. Is it supported against the pressure of the inlet fluid, against the thrust?

A. Well, yes.

Q. What support is provided?

A. The seat on the outlet side of the body.

Q. How is the valve mounted, that is, which is the upstream or pressure side of the valve?

A. This is the upstream side of the valve. (Indicating.)

Q. By that you mean the side of the valve having the housing wherein the floor slopes to the base of the transverse partition or wall?

A. That is correct. [55]

\* \* \* \* \*

Mr. Buckhorn: Your Honor, I object to that last question and again for the reason that the wedge gate valve is not a conventional stock valve

(Testimony of Harold S. Hilton.)

to which the valves in suit more specifically relate. The wedge gate valve is never used in a stock flow line but is used merely in clear fluid line, a clear water line or something of that sort. It is not a conventional valve in a conventional flow line.

The Court: Objection overruled, go ahead.

Q. (By Mr. Cook): In other words, Mr. Hilton, it is your position that where you have a groove such as you find in a conventional valve, gate valve, where one wall is not cut away as in the present [57] structures, that within that groove you would find an area of low pressure where pulp stock would be inclined to deposit during the operation of the valve; is that true? A. That is correct.

Q. Do you have knowledge upon which to express (that) an opinion as to the efficiency of a gate with a groove cut away on the outlet side of the valve? For instance, if you turned these valves around, the solid ring were on the inlet side and the ring on the outlet side were cut away, do you have knowledge which would permit you to form an opinion as to the efficiency of such a valve? What would be the tendency of operation?

A. Well, as you have put it, it would just leak. You have no seat on the downstream side or the side opposite from the low pressure. [58]

\* \* \* \* \*

Q. (By Mr. Cook): In valves of your construction one type of valve is the split housing and one wall—wherein the inner wall of the outlet side

(Testimony of Harold S. Hilton.)

of the housing forms the seat for the gate; is that true, like the one you have in your——

A. Yes.

Q. Like the model you have in your hand?

A. Yes.

Q. The other type of valve which you make is where you use rings welded into position, one solid ring forming the seat of the gate and the other ring forming the guide; is that true?

A. That is correct.

Mr. Vosburg: That is Exhibit H.

Q. (By Mr. Cook): The latter type of valve is exemplified by Defendant's Exhibit H, I believe. That's your other valve over there.

A. That's the bonnet.

Q. That's the bonnet type valve?

A. Yes, paper stock, yes.

Q. Is that true, and those generally are the two types of valves involved in this action?

A. Yes.

Q. Are you manufacturing valves of these types at the present time?

A. Which type, both? [59]

Q. Each type.

A. We are manufacturing the bonnet type stock and the bonnetless type stock, which is, which does not have a split housing.

Q. Referring to Exhibit 11, the bonnet type stock valve is illustrated at the top of the page?

A. Yes.

Q. And the other valve you refer to, the bonnet-



(Testimony of Harold S. Hilton.)

less type which doesn't have a split housing, is that, how does that differ from the valve illustrated at the bottom of the page?

A. Well, it is similar to the bonnet stock except that it has, except that it is bonnetless and that we just incorporated a rectangular packing which (floats) fits right on the flange of the body of a bonnet type.

Q. Well, is it a one-piece valve?

A. Well, the body is one-piece, yes.

Q. And what in that valve, what forms the seats?

A. The same as the bonnet type.

Q. In other words, you mean rings?

A. That is correct. [60] \* \* \* \* \*

### JOSEPH W. GILL

a witness called in behalf of the plaintiffs, having been first duly sworn to tell the truth, the whole truth and nothing but the truth was examined and testified as follows:

#### Direct Examination

By Mr. Cook: \* \* \* \* \*

Q. Were you ever associated with Mr. Walter G. E. Smith and in what capacity? [63]

A. Well, I was employed at the Smith & Watson Iron Works and Smith & Valley Iron Works as an engineer and as Chief Engineer the last, for the last six or eight years.

Q. During the period of the last six or eight years of your employment with the Smith & Wat-

(Testimony of Joseph W. Gill.)

son and Smith & Valley Iron Works, what was principally the business of that company?

A. Well, in the latter years of that period it was work in connection with machinery and equipment for pulp and paper industry.

Q. What was your connection with that work?

A. Well, as Chief Engineer and head of the Design Section I had charge of it all, didn't do it all myself, but I had charge of the men that were doing it.

Q. Approximately how many men were employed by the Company?

A. Well, I would say in the neighborhood perhaps of two hundred or more. [64]

\* \* \* \* \*

Q. Are you familiar with the type valves used by the pulp and paper industry preceding the time of the development of the Smith valve?

A. Well, yes, I would say that I was.

Q. Can you tell the Court of the nature of those valves; what kind of valves were they?

A. Well, they were—the most commonly used was what was called plug valve. It was a body with a rotating plug and a round hole [65] through the plug which matched the entrance and outlet openings of the valve, and it turned in that casing. That was the most familiar type, though there were several other types. There was what might be called now—well, it had a raising and lowering sort of a tube that went down and cut across the flow of

(Testimony of Joseph W. Gill.)

the stock. That was one and, well, those were the main ones that I just recall now.

Q. Were gate valves commonly in use in the pulp and paper industry?

A. Well, not as a rule, although I think there were types of gate valves used through the mills.

Q. I am speaking now for controlling the flow of pulp.

A. I think, well, I am not definitely sure, but I think there were some used in places.

Q. What can you say as to the satisfactory operation of valves in the pulp and paper industry?

A. Well, they were not satisfactory because they were more or less of the type of the common gate valve that is used for water or the gate valve that is used for the steam, water and oil which has a pocket down under the seat, and the valve usually seats in a wedge-shaped seat, and the pocket down below is a great collector of stock, and then even the ones that I was trying to picture in my mind, I think there was some with a plate, raising and lowering plate that went down in between, but it had a pocket down at the bottom and was probably made just with a flat bottom edge. I am just trying to remember that, but I believe I have seen such [66] valves used in the mills.

Q. What was the principal difficulty with the round plug valves?

A. Well, the main objection was to the fine fibers of stock getting into the rotating plug and

(Testimony of Joseph W. Gill.)

housing, making it difficult to operate, and then another thing, if they are made loose enough so they will operate easily the pulp dehydrates very quickly after the valve is shut off. In other words, the water runs out of it, will leak through the valve. That's what would cause the trouble in the pipe line. They have to be cleaned out and washed out and pipes disconnected.

Q. What happens, Mr. Gill, when the water seeps through a valve?

A. Well, it seeps out of the pulp adjacent to the valve, and it keeps working back until finally that gets dried out to such an extent that it just forms a solid mass in there.

Q. Then what happens?

A. Well then, they just have to go to work and clean it out.

Q. What are the common sizes of pulp fiber; do you know?

A. Well, I don't know, but they are measured in a few thousandths of an inch. I know that, very fine they are, microscopic almost. In fact, we have looked at them with a microscope.

Q. Can you explain to the Court the manner in which the Smith valve solved some of the problems confronting the pulp and paper industry at that time? Now I have handed you, Mr. Gill, I have handed you Plaintiffs' Exhibit 6 which is a plastic and wood model of the Smith valve. [67]

A. Well, one of the things this valve did, it did away with this pocket at the bottom that an ordi-

(Testimony of Joseph W. Gill.)

nary gate valve with a flat blade type might be. It did away with that by relieving all this ring at the bottom or around the bottom edge of this, see, and then by making the blade a knife edge on the bottom, that is, tapering toward the outflow of the valve. As this comes down any pulp that might be lodging in it or if it had particles down in this area, as this came down it would go down through it and, being forced against the seat, would scrape it off the seat and push it back into this free area here. (Indicating.) Now, that was the—that is really in my mind is the main feature of the valve.

The Court: Where is the ring?

The Witness: Well, there is no ring in this, well, you might call this a ring on the outlet side. It forms a surface to support the valve, to support the leaf. It's a supporting area for the leaf, but there is no ring on this side. Well, you can call it a ring. It might be a ring. It's this portion coming down here which is relieved at the bottom so that the pulp that is scraped off, if there is any in here, it can be scraped off by this and pushed down to this bottom plate here and shoved out into a free space.

Q. (By Mr. Cook): Now by bottom plate, Mr. Gill, you are referring to the recess in the bottom inlet side of the valve?           A. Yes, sir.

Q. What relation does the recess formed by the sloping floor on [68] the inlet side of the valve

(Testimony of Joseph W. Gill.)

have with the grooves which form guide-ways for the gate?

A. Well, it's at the bottom end of the grooves. It forms an opening at the bottom of the grooves so that pulp that might be lodged in there could be scraped off on the face towards the opening. There is a possibility of it, and then it would be removed through the opening down there. (Indicating.)

Q. Are you familiar with the Defendant's valves?

A. Well, I have been looking at it there, and I did see one of the valves once before, yes, I am somewhat familiar with it.

Q. I would like to hand you Plaintiffs' Exhibit 7, I believe, and ask you if you find in that structure, in that valve a structure similar to the one you have just been describing? In the first place, is there a transverse wall against which the gate seats?

A. Yes, there is, there is the front wall, and then it's free, it has a free flow backwards from the plate where it comes down at that knife edge.

Q. By reason of what, of what construction?

A. Well, it is a sloping bottom here and sides up to the point where the guide runs out.

Q. In other words, there is a guide-way for the gate in that valve? A. Yes, sir.

Q. And there is a bottom which slopes away from the valve when seated? [69]

A. Yes, sir.

(Testimony of Joseph W. Gill.)

Q. And the grooves which form the guide-way for the gate empty into the recess formed by that sloping floor; is that right?

A. That's right, yes.

The Court: We will take a brief recess.

(Thereupon, a short recess was taken.)

(Trial resumed.)

Joseph W. Gill, recalled, testified as follows:

Direct Examination—(Continued)

Q. (By Mr. Cook): Mr. Gill, what is the function of the knife edge of the gate?

A. To clean off the face of the, the seating face of the valve, and then if there should happen to be any lodgement of pulp down here at the bottom to come down into it and force it away from the seat.

The Court: A flat seat would not do that?

The Witness: Well, it might push it off to the side to that extent, but when it came to the bottom it would just commence building up, and pretty soon you would not be able to shut it.

Q. (By Mr. Cook): What is the function of the seating ledge or transverse wall between the inlet and outlet ports?

A. That's to support the slide or leaf or valve, whatever you want to call it.

Q. The gate? A. Yes, the gate. [70]

Q. Is the gate in Defendant's Exhibit 6 valve supported across the opening in the same manner as the Smith valve?

(Testimony of Joseph W. Gill.)

A. Well, it is in the same manner just—except for the shape of the bottom portion of the Smith valve. Outside of that it is supported all the way down.

Q. By what reason, that is, by what reason of structure?

A. Well, that, the ledge on the outlet side, the ledge on the outlet side supports that, and as the rounded edge of the plate comes down across that it gradually creeps out over that and when it's shut beyond the bottom surface then it is supported all around by that ledge on the outlet side of the gate.

Q. Do you find the arc or circle of the lower end of the gate in Defendant's structure of longer radius than the outlet opening?

A. Yes, it's a longer radius. It would have to be or, otherwise, it wouldn't cover the—you see, it comes down from the sides of the leaf, and it is wider than the opening, so, naturally, it has a longer radius.

Q. And because it has a longer radius, it makes a larger area than the area of the opening; is that true?

A. That's right.

Q. And finds support across the opening as it closes; is that correct?

A. That's right, as it goes clear down it is supported on the bottom as well.

Q. I am a little forgetful here. I believe you—



(Testimony of Joseph W. Gill.)

or did you [71] testify that in Defendant's structure the grooves in which the gate slides are cut away to discharge the material therefrom into a recess at the bottom of the valve; did you testify to that?

A. I don't remember just what I did say there, but they do, they do run out, that is, they come down against the lower edge of this, down to the seat where it curves up and then there is a little—up to the tangent that runs into the edge of the guide, but they do run out down there. It's sort of a tapering edge running out there. You might call it a pocket or call it whatever you want. It just gradually runs out.

Q. Is there a recess or something, whatever you want to call it, where the groove runs out?

A. Well, there is a little small recess due to the fact that the bottom edge of the plate is beveled off. There is just a little bit of a recess there.

Q. Well, I am talking about in the housing.

A. Well, no, no, it is formed by the housing. It is not an additional recess. It is just—the edge of the housing comes down there, the beveled edge of the plate makes a little recess in there. I don't know whether I make myself clear or not. You might take a look at it.

The Court: No, I understand.

Q. (By Mr. Cook): And material which is caught in the grooves in which the gate slides is pushed out of the grooves by the descending [72]

(Testimony of Joseph W. Gill.)

gate through these recesses and into the bottom of the valve; is that true?

A. Yes, that's true. [73]

\* \* \* \* \*

Q. (By Mr. Cook): This valve, valve h, Mr. Gill, is formed with a solid piece of tubing?

A. Yes.

Q. It is not a two-piece valve? A. No.

Q. The valve j is a two-piece valve?

A. That's right.

Q. Valve h is simply a one-piece tubing with a slit cut in one side of it for the gate to slide into?

A. That's right. [75]

Q. And on either side of the opening for the gate are welded rings? A. That's right.

Q. One solid ring to form a seat for the gate and one portion of a ring to form the walls or guide for the gate on that side, on the inlet side; is that correct?

A. That is correct. It does the same thing as the other one with this exception, that the other one is cut away like that there. I wouldn't know why that was left on there.

Q. Well then, in valve h the ring on the inlet side of the valve is cut away at the bottom of the valve? A. Is that the one here?

Q. Valve h.

A. Yes, it's cut away just like the other one. In other words, this surface runs right straight down, and as the valve comes down it can go down here, and any lodgment of the pulp or anything

(Testimony of Joseph W. Gill.)

that's been scraped off or been here can come down and be pushed back.

Q. You are speaking of any lodgement of pulp which may be at the base of the gate?

A. That's right. [76]

\* \* \* \* \*

Q. (By Mr. Cook): In other words, as I understand your testimony, Mr. Gill, it is your position that the solid ring which forms the transverse wall in this valve or what defendant's counsel was pleased to call the seating ledge, is exactly the same structure as the seating ledge in valve j; is that correct?

A. Yes, that's right. It is the same thing as that.

Q. And on the forward side, on the inlet side of valve h, the ring that has been cut away at the bottom of the valve so as to open up the side of the groove provides exactly the same structure as the groove in valve j which runs out adjacent to the bottom of the valve?

A. Just the same, same thing, only I shouldn't—

Q. Now, will you please—what were you going to say?

A. I can't say it doesn't do it quite as good. If that little corner was cut off there it would do it better.

Q. Well, please compare this valve and the Smith valve in respect to means for performing the function and the result accomplished.

(Testimony of Joseph W. Gill.)

A. Well, I would say that it does the same thing exactly.

Q. You mean that the——?

A. It will push, it will push, first off it comes down against this, the seat, as it closes, and any accumulation of pulp here will be pushed away by the knife edge allowing the slide from clear down to the bottom of the seat, and by the same token anything in the guide here—and I guess that's supposed to be tapered back there, too—it don't feel like it—but it could [77] be pushed down around here and then it would be pushed around to this point and then be free so it actually does the same thing.

Q. "Up to this point," you mean where the groove runs out?

A. Where the groove runs out, yes. Any pulp that was lodged in here would be pushed down, right on down by the valve and come out. There is a ridge there.

Q. Would you say that the purpose in cutting away the ring on the inlet side of this valve would be any different than doing without the wall on the inlet side of the Smith valve?

A. No, I would say it does the same thing. It answers the same purpose.

Q. Would it perform any additional function?

A. No, I wouldn't say that it would, or any better. It does the same thing.

Q. Then the groove in the Defendant's structure, valve h, the fact that the inlet side of the

(Testimony of Joseph W. Gill.)

groove is cut away is intended, in your opinion, to perform exactly the same function as the structure of the Smith valve?      A. Yes, sir.

Q. Is that true?      A. Yes, sir.

Mr. Cook: That's all, your witness. [78]

\* \* \* \* \*

WALTER G. E. SMITH

one of the plaintiffs, called in his own behalf, having been first duly sworn to tell the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

Direct Examination

By Mr. Cook:

\* \* \* \* \* [82]

Q. What was your experience with relation to valves for controlling the flow of pulp?

A. Well, I didn't get into that to any great extent until we got in the deal with Valley Iron Works, and they thought they had as good a line of equipment as anybody, and including that was what they called the Valley Plug Valve, which I heard Mr. Gill describe it to you a while ago as just simply a plug with an opening through the center corresponding with an opening through the walls of a cylinder which turned on a radial axis. We found that in applying this to the West Coast operations here that the pulp was much finer, and it gave a great deal of difficulty, so while we sold a great many hundreds of them, we never considered their operation successful, and were always

(Testimony of Walter G. E. Smith.)

seeking a way out to get something better. So that is why I started to build one. That wasn't the only one. We built what was called the Reed Valve, which was a plunger type valve just like a piston [84] going down into a cylinder with pipe connections at the bottom, the plunger crossed the flow of the stock and closed it that way. That had too much area though there are still quite a few of them in operation, for such operation, that with sulfite pulp, and it plugged up very easily, and you couldn't move it, but it worked all right in sulfate.

Q. At that time were gate valves in use in these particular places?

A. Oh, yes, there was a straight type gate valve that had been in use more or less, made by Record Company, a Maine concern. There were also some made in the Middle West. They were not very successful out here, and the gate valves in general use out here, though they didn't use bevel gate valves, there were hundreds of them in use in stock lines and they gave endless trouble.

Q. For what reason, Mr. Smith?

A. Because the slot at the bottom plugged up. They had a slot at the bottom which they also had with the straight type gate valve. [85]

\* \* \* \* \*

Q. How successful is the operation of those valves?

A. Well, in some instances it's all right. They can be used in [86] some cases, but wherever they have a pressure operation in which stock is pumped

(Testimony of Walter G. E. Smith.)

under pressures that range above 15 or 20 pounds of pressure, then they are absolutely hopeless. I might say this, Mr. Cook, that during the years prior to 1930 pulp was not pumped around the mills under any great amount of pressure. In other words, that was a thing that developed at that time with the changing technique.

Q. As pressure was increased in the pulp lines did the valves give additional——?

A. Then the trouble increased with them.

Q. You say the trouble was increased with them? A. Multiplied.

Q. With the increase in pressure it increased the trouble?

A. That is correct, because the pressure found the various orifices and the opportunity to enter into areas between contacting surfaces. They had to be more or less open so they could operate and function. Well, they couldn't be absolutely tight so pulp would be forced into those orifices. That's what gave the trouble. [87]

\* \* \* \* \*

Q. Did mill operators approach you with the problem regarding valves and ask you——?

A. Many times, many times because every one knew that the operation of no valve at that time was completely successful. No valve even approached it in this territory around here where they were making a higher grade sulfite pulp and a very much thinner cook so their valve trouble

(Testimony of Walter G. E. Smith.)

increased correspondingly. As a result, they were having plenty of trouble.

Q. When did you first start to work on this problem, Mr. Smith?

A. Well, I had a big order for valves from Crown Zellerbach Corporation, of which Mr. V. D. Simonds of Chicago was the engineer. [88] In the changes that they made in 1929 and '30, I supplied them with, oh, probably four or five hundred valves, plug valves and plunger type, and when they got into operation wherever they had high pressures they began to give troubles, so Mr. Simonds requested of me that I try to solve the problem for them, and that was the result of it. They wanted to put my valve in a place where they were operating under considerable pressure, probably the highest that any of them had ever attempted before. The valve in use was making a failure of it. They could not open it and close it when they wanted to so I designed one, built it for them, and I think it is still there.

Q. What do you mean, "there?"

A. In Camas, in the mill. [89]

\* \* \* \* \*

Mr. Buckhorn: Yes, I do in a Patent of this sort, one which is merely an improvement of a Patent in a highly developed art. For example, in the Hedrick Patent which was referred to by Mr. Gill, that particular Patent discloses a round opening on the reverse side. Mr. Gill testified that insofar as the valve structure is concerned, that



(Testimony of Walter G. E. Smith.)

shown in the Hedrick Patent is the full configuration equivalent of the valve structure shown in the sample unit, and it is absolutely improper for a higher interpretation to be placed upon it to broaden the scope and broaden the use thereon of a valve of any structure other than a V-shaped opening.

Mr. Cook: If your Honor please, a Patent is measured by its claims. As Mr. Buckhorn told you this morning, a Patent comprises drawings illustrating the device, a description of the device, and then the definition of the invention, which are called claims, and there can be as many claims as the Patent Office will allow. Not all the claims are alike. In fact, none of them are alike. In this Patent there are six claims, and there are six different definitions of the Smith invention, and the first two claims do not recite the shape of the opening through the valve. In fact, they do not even mention it.

The Court: Mr. Cook, I am going to exclude this exhibit on [91] the ground that it was not marked as a pre-trial exhibit, but you may interrogate the witness as to the contents, not on the same material.

Mr. Cook: That's primarily why I was handing it to him, so as to refresh his memory on the particular valve.

The Court: He can testify about it, but he cannot use it for any purpose whatsoever.

Q. (By Mr. Cook): Mr. Smith, do you remem-

(Testimony of Walter G. E. Smith.)

ber the construction of the valve installed in the mill at Camas, the first valve about which you were testifying a moment ago?

A. Yes, I do.

Q. Can you describe it?

A. It was almost the identical valve that we have today with the exception of the outlet side was round instead of V-shaped bottom. That was the only difference.

Q. In other words, the valve incorporated all of the essential elements of the Smith Patent; is that your contention?      A. I think so, yes.

Q. Was the gate supported across the opening?

A. It was.

Q. By a transverse wall?

A. By a transverse wall as also is this one.

Q. I have supplied you with the plastic and wood model of the Smith valve, which is Exhibit No. 6, and will you point out to the Court how the first valve placed in operation in the Crown [92] Zellerbach Mill at Camas differed in structure from this valve?

A. I didn't quite get you on that, Mr. Cook. You will have to pardon me, I am a little bit hard of hearing.

The Court: Mr. Cook, will you either speak louder or do you want to take a seat in the jury box, which is closer?

Mr. Cook: I have a rather soft voice.

Q. (By Mr. Cook): I have supplied you with

(Testimony of Walter G. E. Smith.)

the plastic and wood model of the Smith valve, which is Plaintiff's Exhibit No. 6. A. Yes.

Q. And will ask that you use that model in explaining to the Court the construction of the valve placed in the Crown Zellerbach Mill at Camas, the difference in construction.

A. Your Honor, that valve was designed identically the same as this, except that this opening here was round instead of V-shaped. Everything else was identical. I might say that the guide slots on the intake side of the valve were very much shorter before they faded out. This recess or cavity that has been mentioned is neither a recess nor a cavity. It is merely the fade-out of the guide wall, is all it actually is, because the bottom has always come flush. On the one side it makes a transverse wall, which is the—the guide slot becomes the transverse wall at the bottom, and that is full and complete all the way around as you see it here in this black section. On the opposite side or the intake side the guide is cut away to permit the stock to be pushed out through the bottom when you are closing the valve. It is merely [93] cut away flush with the bottom of the outer edge of it. You see the same thing, it is flush across there, flush across there, and it's merely—all that happens here is that that section of the guide on the intake side is removed at the bottom to relieve the valve plugging up at that point. That permits the stock to return into the circulation, and the central wall here closed the valve at all times.

(Testimony of Walter G. E. Smith.)

Q. Do you find a similar structure in defendant's valve identified as Exhibit J?

A. Well, I find that instead of a rectangular section on the intake side and a V-shaped section on the outgoing side, they have a round section, two concentric circles practically, one with a little larger radius than the other which permits, when they are bolted together, it permits one to be offset from the other. That creates the wall, and a slot which is a full slot all the way around on the outlet side, fades out about mid-way on the intake side which—it fades out a little lower down on this one and fades a little higher up on this one. And I notice that one valve, it fades out differently. One valve fades out way up here, and the other valve fades out way down below here on the round section, but on that thing there that fades out mid-way. That's where the bottom begins and the top ends, see, the bottom of the valve—

Q. Just a moment, when speaking of that valve you are speaking of Plaintiff's Exhibit 7? [94]

A. Plaintiff's Exhibit 7.

Q. Which is your model of the defendant's valve?

A. This is it. The bottom begins here. (Indicating.)

Q. You are pointing to a line of mid-center?

A. That's right, that's where the bottom begins, and it is cut away from there on. You see, Judge, this is—

The Court: Is that the ring?

(Testimony of Walter G. E. Smith.)

A. This is—it's a guide ring, yes. It's a guide ring there, you see, to there, but then she fades away and there is no more guide ring past that point. We do the same thing, only a little lower down. There is nothing in our claims to show that it has to be one-half inch or three inches or four inches from the bottom or the top. Where is the bottom here, except that it begins here? (Is) The bottom anywhere along there(?).

Q. Now, Mr. Smith, you have testified that in your first valve you installed at Camas the outlet opening, that is, the opening through the outlet portion of the valve, was round?

A. That's right.

Q. Instead of V-shaped at the bottom?

A. That is correct.

Q. Will you tell me the story of the transition from a circular opening or a round opening to this V-shaped opening?

A. Well, I can say only this, that I found out in my experiments with putting valves under pressure that where the big valve, which we started with, the 14 inch valve, and we didn't have our gate [95] too thick, which made it rather sharp on the edge, and when it was put under pressure she bowed slightly and started to shave the surface of the seat which would be the equivalent of this. (Indicating.) You see, so as a consequence of that I thought by straightening out that line there and coming down——

Q. You are pointing to the circular wall?

(Testimony of Walter G. E. Smith.)

A. And straightening out that bottom round section here and making it a V-shaped section. When I straightened that out I found out that the support for the gate was much better, and there was no wear on the surface of the valve seat. We started out making them of rather soft bronze and making them fairly sharp. The result was the slightest bowing there would shave the cast iron section and turn the edge. We tried to protect that first by putting a lead seat in the bottom. We found that that was impractical because the men cinched it down too hard and wrecked the seat just the same, and the valve gate, so we discarded that.

Q. Mr. Smith, is it your contention that you have novelty in this V-shaped opening?

A. Well, I don't know, it is a little bit different. It might be a novel type. We could have gotten by very well without it.

Q. Well, you did make a circular opening, round opening?

A. Yes, we did, but we thought this might be a little better, was the only reason for using it.

Q. Your first valves were with a round opening?

A. Correct, and, as I said to you a moment ago, the first valve [96] after 20 years is still functioning.

Q. Now is it true that whether it be a round opening or a V-shaped opening that the valves function the same?

A. They appear to; they appear to.

(Testimony of Walter G. E. Smith.)

Q. What is the function of that transverse wall in your valve?

A. The transverse wall is supposed to support the valve gate (and) in closing.

Q. Would that be true in this defendant's structure?

A. It is identically the same in principle.

\* \* \* \* \*

Q. Now you have been talking about these features of your invention the gate valve embodying your invention. Can you tell me the relation of the grooves for the gate and the recess formed by the sloping floor of the inlet side of the housing?

A. Well, obviously, you must have a groove to slide the gate in. That's what the grooves are for, and they have to be made in one way or another in this way whether made between two halves, or two sections of the body which when bolted together provide the outer walls of the guides. We also (firmly) formerly milled one section to provide the end wall though a number of them were made with filler pieces which accomplishes the same purpose but with a little [97] different machining cost which is involved in the thing. It all boils down to how much does it cost, what can you get for it.

Q. By "filler pieces" do you mean a spacer?

A. Well, that's the spacer, which is, in effect, this thing.

Q. That's the structure embodied in these two?

A. That separates the two halves so the gate can be transverse between them.

(Testimony of Walter G. E. Smith.)

Q. As in the defendant's structure?

A. That is correct. In this one it is this piece here. (Indicating.)

Q. You are pointing to Exhibit 7?

A. This center piece, yes, this is the defendant's structure. [98]

\* \* \* \* \*

The Court: Is that what you claim is the novelty in your invention, the transverse wall and the slope on the intake side?

A. The effective element which makes this valve work and which makes that one of mine work is the fact that the slots are enabled to be cleaned by having an opening at the bottom—or make it this way, that the guide slots on each side are cut away on one side of the valve which is the intake side. By cutting one away it permits a clearance of the stock that is in the valve up there and is transverse through the valve, and when you shut off this valve the stock piles up so fast that it is just practically a solid mass instantly.

The Court: In other words, you contend that prior to the time you began to make this gate now prior gate valves had a slot that extended the full length of the gate?

The Witness: That is exactly correct. They didn't realize what they were doing when they were plugging up this stock in the bottom. [100]

\* \* \* \* \*

Q. (By Mr. Cook): Is it true, Mr. (Cook) Smith, that the sloping floor of the inlet side of



(Testimony of Walter G. E. Smith.)

the housing provides the recess into which [102] material is scraped by the gate?

A. Yes, it does.

Q. And is that true in defendant's structure?

A. It appears to be, yes.

Q. Are the two models you have before you, are they identical in that respect?

A. Correct, they are. [103]

\* \* \* \* \*

Q. Mr. Smith, I have laid a tablet on your desk on which I have drawn a line which represents the bottom of the tube forming that valve and on which I have drawn a rectangular cross section representing the solid ring. If that ring were continued it would come down to the place indicated by the dotted line. Is it true that pulp passing through the valve will find a path or flow over the top of that solid ring?

A. It will run level. It will fill it up to that point.

Q. Well, of course, but I mean then when this portion, this space if filled would your flow be over this point? (Indicating.)

A. That is correct.

Q. Formed by the inner surface of the ring?

A. Yes, the same as a transverse wall.

Q. Then do you get the equivalent of a structure like this (draws on paper) where the ring, the inner surface of the ring is on a level with the outer opening of the valve or of the opening of the valve?

(Testimony of Walter G. E. Smith.)

A. You do because the flow of stock immediately makes it level.

Q. In other words, the stock would (show) fill up in this space again? A. That is correct.

Q. So that this has the effect of being solid here, and it would have the effect of being solid in there; is that true?

A. That's right, that's the way it functions.

Q. So that though the floor of the valve on the inlet side does not slope downwardly to the valve seat, the action of the pulp in flowing through the valve has exactly the same action in the valve?

A. That's right.

Q. Now will you take the pencil and if you want to make a better drawing than that, you have my permission. A. No, that's all right.

Q. I would like to have you explain that to the Judge and make appropriate drawings so that he can understand it. I would like the Judge to see that.

A. Judge, here is what Mr. Cook is trying to show and to get me to verify. Now this is the situation in the ordinary valve, Judge.

Q. (By Mr. Cook): The tube is straight? [114]

A. We show here a depressed floor. This is the bottom, the bottom of the v theoretically or the bottom of the slot, you see. That would be here, you see. In other words, you have got practically a straight line across there. In order to get the straight line you have to depress this. Now that's what you have in this instance. In o there they put

(Testimony of Walter G. E. Smith.)

a ring there which lifts that from the floor, and in this particular operation the stock merely flows up to it, fills in here and you have the same equivalent. She fills in from the entrance right straight across just like silt flowing into the corner. It fills up level. That's the way we make sandbars.

Q. In other words, then, it is your position that the structure illustrated on Plate 2 which is Exhibit O is the equivalent of the Smith structure having the depressed floor on the inlet side.

A. Correct. Works out the same way, yes. [115]

\* \* \* \* \*

Mr. Cook: Well, did the witness testify that the transverse wall is obviously to support a gate against the thrust of the incoming liquid?

The Witness: Yes, I think I mentioned that. That's what it is, a gate support. Without it you couldn't function.

Mr. Cook: That will do.

Q. (By Mr. Cook): What is the extent of the use of the Smith valve by the industry?

The Court: There is a stipulation on that, Mr. Cook. The only question is how long has the Smith valve been in general use. That is the only question not stipulated.

Q. (By Mr. Cook): How long has the Smith valve been in general use in the pulp and paper industry in this country?

A. Well, we started making them before a Patent was issued, and during that period of time, which you know is during the depression, there

(Testimony of Walter G. E. Smith.)

were very few mills constructed, a few. But as soon as they started building those in 1936 Smith valves and Crane valves went [118] into practically every new mill built in the United States. Of course, then the war came on, and then there was no business again to speak of until the end of the war, and since that time a great many have been installed in the newer plants again, and, of course, to a certain degree in the old plants.

Q. Do you have any knowledge as to how many Smith valves have been put in use in this country?

A. No, thousands of them, thousands of them.

Q. Are they generally in use at the present time in new construction?

A. Yes, they are, a great many.

Q. Do reports from the Crane Company indicate the sale of great numbers of valves at the present time?

Mr. Buckhorn: That's stipulated on that, your Honor. [119]

\* \* \* \* \*

Cross Examination—(Continued)

Q. (By Mr. Buckhorn): Mr. Smith, a considerable amount of your testimony on direct examination was with regard to a transverse wall which was incorporated in your particular valve. Is it not true that virtually every gate valve has a transverse wall incorporated in it?

A. Well, some of them would have two of them.

Q. Yes, but they all have one transverse wall at least, do they not?

(Testimony of Walter G. E. Smith.)

A. Every gate valve has to have one or two, yes.

Q. And is it not true that every gate valve has an opening on the outlet side of the gate in such transverse wall?

A. That is correct. [121]

\* \* \* \* \*

Mr. Buckhorn: Yes, that would probably be the better thing. I will withdraw the question. With the direct examination of my own witness I can probably bring out all those features since they have studied all of the details. One question I do want to ask Mr. Smith, and that is with particular regard to his experiences with the gate bending under pressure and in the particular modification valve which he constructed for installation at the Camas Mill having a round opening in the transverse wall. You stated in that case in the direct examination, I believe, that it was observed that the wall in that case had a tendency to bow and that the lower edge tended to cut away metal from the side at the bottom.

A. I think you misunderstood me, Mr. Buckhorn, I didn't say that Camas valve did that. I said other valves that I built experimentally showed some evidence of attrition at that point.

Q. What shape of opening did those experimental valves have in them?

A. Round ones.

Q. Round openings, and what was the shape of the gate that you provided in such valves?

A. The same as we have.

Q. A rectangular gate?           A. Yes.

(Testimony of Walter G. E. Smith.)

Q. With a square bottom?

A. Uh-huh. [132]

Q. And you had a transverse wall extending upwardly from the floor of the valve substantially similar to the transverse wall as shown in L-prime?

A. Same as the notes. Just the same.

Q. Now I am speaking of Plate 1 which is the Plaintiffs' valve shown in the Smith Patent.

A. Yes, but you are referring to the one with the round opening, weren't you?

Q. I asked you if your valve which is the plate with the round opening in it had a transverse wall extending upwardly from the floor.

A. Precisely the same as the one with the V-shaped opening. The only difference is one was rounded slightly on the bottom, and the other is V-shaped.

Q. But you did say, I believe, that your experiment with those valves was to the effect that the gate did tend to bow under pressure?

A. The edge turned.

Q. The edge. Do you want to correct your testimony then which you previously gave to the effect that the valve tended to bow using a round opening?

A. Well, that's exactly—you would figure that the edge was bowed, wouldn't you?

Q. You mean by that the lower portion of the——? A. That is the knife edge. [133]

Q. That is the knife edge?

A. That's what we referred to.

(Testimony of Walter G. E. Smith.)

Q. Bowed in which direction?

A. Toward the seat.

Q. Toward the seat, and it tended to cut away metal from the seat?

A. We figured it would, yes.

Q. Did it actually do it?

A. There was some signs of attrition there.

Q. And that was avoided by changing the size of the opening to V-shape?

A. We never saw any more evidence of it when we did that.

Q. Pardon me?

A. I say, we never saw any more evidence after we did that.

Q. That corrected the difficulty then with it?

A. It appeared to, yes.

Q. I see.

A. Understand this, Mr. Buckhorn, let me make myself perfectly clear, that the treatment we gave those first valves experimentally were based on high pressures. We didn't ourselves realize that they would be subjected to much lower pressures than we had originally figured on. With our valves we tested around 125 to 150 pounds while the actual pulp mill pressure is rarely over 30 so it made a lot of difference.

Q. Yes, Mr. Smith, suppose that the lower end of your gate h as shown in Plate 1 were made of a V-shape substantially similar [134] to the bottom of the V-shaped opening. Would that gate be sup-

(Testimony of Walter G. E. Smith.)

ported equally as well as the gate which in its present form is shown rectangular shaped?

A. I don't think so.

Q. You don't think it would?           A. No.

Q. Do you think it would bow under pressure?

A. It depends on how heavy you made it and what your pressures were.

Q. So that bowing, in order to prevent bowing of the gate under heavy pressure you would need the transverse walls portions marked at L-prime on Plate No. 1 to support the opposite sides of the gate?

A. We figured this would do it better than the round opening.

Q. Yes, all right then, I have no further questions.

The Court: What was the question before the last point when you were referring to Figure h, Plate 1, the question preceded by a statement that if it had been rounded it would have been different?

Mr. Buckhorn: No, if the bottom end of gate h as shown in Plate 1 were made of the same configuration as the V-shaped opening, if it were cut back at angles corresponding to the angles of the bottom, as to whether or not the gate would then be supported by the transverse wall and prevent bowing, and the answer was "No." [135]

Mr. Vosburg: I think he said would it be supported as well, and he said "no".



(Testimony of Walter G. E. Smith.)

The Witness: That's what you said, would it be supported as well.

Mr. Buckhorn: All right.

The Witness: And I said it would not.

Q. (By Mr. Buckhorn): Would it be supported at all by the transverse wall?

A. The end of it wouldn't from the points where it left the wall.

Q. That's right.

A. Certainly not, it would spring. [136]

\* \* \* \* \*

HAROLD S. HILTON

recalled as a witness in behalf of the defendant, testified as follows:

\* \* \* \* \*

Direct Examination

Q. (By Mr. Buckhorn): Mr. Hilton, will you explain to the Court who designed the valve structure shown by the Defendant's Exhibit G, which is a split housing type of valve? A. Yes, I did.

\* \* \* \* \*

Mr. Buckhorn: Oh, I did? Thank you very much. The bonnet type valve which is the one-piece housing which is marked as Defendant's Exhibit G. The question was as to whether or not [137] Plate 2 accurately portrays and illustrates the structure as incorporated in that particular valve? A. Yes, it generally does.

Q. And I believe you stated that you designed that particular valve? A. Yes.

Q. Then with regard to the next valve which

(Testimony of Harold S. Hilton.)

is the Defendant's Exhibit No. K, will you state who designed that particular valve?

A. That is the bonnetless type?

Q. That is the bonnetless type valve.

A. Yes, I designed that valve, too.

Q. And would you say that the plate of the Exhibit No. 3 accurately shows and illustrates the internal structure of that particular valve?

A. Yes. [138]

\* \* \* \* \*

The Court: What number is the ring on Plate No. 3 that you are talking about.

The Witness: There is no ring shown.

Mr. Buckhorn: There is no ring shown in Plate No. 3. The ring, the renewable ring appears only in the blueprint of the Exhibit No. 3 which you have before you.

The Court: But the ring is inserted in the slot identified as 15?

The Witness: 15, the wall, the seat on the outlet side is machined to take the seat. The seat is a ring, and it is just pressed right in, especially when you have unlike materials like a mild steel body and you want stainless seat. You just machine the seat for the ring and press the ring into place. Then if you want to replace the ring in the seat you pull the ring out.

The Court: One ring goes all the way around, it's a full circle, [142] and the other is only a half circle?

The Witness: That is correct, and we only had

(Testimony of Harold S. Hilton.)

a removable seat on the outlet side, just a complete ring.

The Court: Oh, on the intake side is a half ring which is permanent?

The Witness: That is just part of the body.

The Court: And is the half ring part of the transverse wall?

The Witness: No, that is the wall of the inlet portion. The transverse wall would be the wall with the removable ring in it, which is the outlet half of the body or the seat which the valve gate bears against. [143]

\* \* \* \* \*

### Cross Examination

Q. (By Mr. Cook): I believe you testified that all of these gate valves required what you are pleased to call a transverse wall; is that true?

A. That is correct, on the outlet side they all have a complete circular seat.

Q. Some kind of a seating support there to support the gate? A. That's right.

Q. And in the structure shown on Plate 2 which, I believe, is the Exhibit O, the ring, the solid ring, the complete ring in that structure functions as a transverse wall; is that true?

A. That is correct, that is the seating ring on the outlet side of the bonnet type, yes.

Mr. Cook: That's all. [158]

\* \* \* \* \*

## PAUL J. THIESS

a witness called in behalf of the defendant, having been first duly sworn, was examined and testified as follows:

## Direct Examination

By Mr. Buckhorn:

\* \* \* \* \* [160]

Q. Mr. Thiess, I would like to ask you whether or not you have ever seen valves prior to December 3, 1930, which is the filing date of the application, which matured into the Smith Patent in suit, having grooves formed in the opposite side walls of the valve body and with the grooved flanged cut away on the one inlet side of the valve above the bottom of the floor?

Mr. Cook: If your Honor please, I object to the testimony as such. Let's have them in evidence so that we can look at them.

The Court: Objection overruled.

Mr. Buckhorn: You may answer the question.

A. I don't believe I have ever seen any valves of that nature prior to that time. I visited quite a few mills during the [169] years I was in Everett and also even at the time I was with Weyerhaeuser, and I don't recall anything of that nature.

Q. Mr. Thiess, I call your attention to the Hedrick Patent 988,777 filed or issued April 4, 1911. This is a copy of the patent which is included in the exhibits enclosed in the folder we mentioned. Mr. Thiess, did you see any valves of the type shown in the Hedrick Patent, or have you seen

(Testimony of Paul J. Thiess.)

any valves of the type shown in the Hedrick Patent installed in a pulp mill?

A. Yes, I have seen these quite frequently all the years that I have been connected with the industry.

Q. When was the first time that you saw a valve of that type installed in a pulp mill?

A. About two or three months after I went to Sumner Iron Works in Everett. That would be in 1929.

Q. In 1929?

A. Those type valves were being used in flow boxes and mold boxes at Everett and Puget Sound and some of the other mills that I visited at that time.

Q. Referring to the drawings of the Hedrick Patent, does that Patent show a valve which would be suitable for use in the pulp flow line in a pulp mill?

A. At a medium pressure range it would.

Q. And does this patent disclose a valve having a rectangular gate for controlling the flow through the valve orifice?

A. That is correct; it's a rectangular gate. [170]

\* \* \* \* \*

Q. Have you ever built valves yourself or supervised the design and construction and installation of valves of the type shown in the Hedrick Patent in pulp mills?

A. Yes, I have at Everett, the Sumner Iron Works, the mold vats had regulating valves be-

(Testimony of Paul J. Thiess.)

tween the different compartments that had sliding gates of this nature, and the ones that we furnished Puget Sound were valves of this nature. At Longview Fiber in some of the head boxes and mixing boxes in both the ground wood [174] mill and the paper mill of my own design had plates of this nature. Only very recently at Publishers Paper I had a head gate for the refiner mixing box which had a gate of this nature which has openings at the bottom to expel any accumulation of stock.

Q. And then I want to repeat again because of the importance of it the date at which you first saw a valve of that type installed in the pulp flow box?

A. This type of valve?

Q. Yes. A. I would say in 1929.

Q. 1929. Would you say early part of 1929 or—?

A. No, it would be the latter part of 1929.

Q. Latter part of 1929, and such valves were substantially the full equivalent of this valve here with the exception of the cavities in, provided in the opposite side walls of the body ahead of the gate plate? A. That's right. [175]

\* \* \* \* \*

Q. I would like to refer next to the Sumner Patent No. 1,379,136 dated May 24, 1921. Hand that to Mr. Thiess, please. Mr. Thiess, have you studied the specification and disclosure of this Patent? A. Yes.

Q. Will you please describe the structural ar-

(Testimony of Paul J. Thiess.)

rangement and operation of that valve to the Court?

A. The valve itself, body 22 carries the check valve portion 18, also runs in the guides, this main portion runs in the guides 15.

The Court: What figure are you looking at, 1 or 2?

The Witness: Figure 1. The guides 15 show up there. 18 is the principal casting which is shown in Figure 2.

Q. (By Mr. Buckhorn): 18 is the check valve and 16 is the gate? [182]

A. Oh, yes, I beg your pardon, I am wrong. 16 is the principal part of the gate, and the gate is raised in the valve bonnet similar to the other valves by stem operated by hand wheel 31. The gate has two seats, one for the check valve 18 which is an inserted seat 21, and the main body seats against the main portion of the valve body at 14.

Q. Mr. Thiess, you mentioned the check valve which has that round dome-shaped part 18 shown in all three of the figures 1, 2 and 3, and which part is hinged at the point 20. Will you explain the function of that particular element of the valve?

A. The normal inlet of the, of this valve would be 10.

Q. On which side, do you recall?

A. On the right-hand side of Figure 1.

Q. Pardon?

A. On the right-hand side of Figure 1.

(Testimony of Paul J. Thiess.)

Q. That would be the——

A. Inlet side of the valve, the stock pressure, the line pressure would open the check valve irregardless of what position the main—— [183]

\* \* \* \* \*

#### Cross Examination

Q. (By Mr. Cook): Now, is there a housing which forms a recess in front of the [208] transverse wall or seating ledge of the gate which would be forwardly of the gate, that is, on the inlet side?

A. Yes, it shows a circular section of pipe. Is that what you refer to?

Q. No, isn't that the outlet side?

A. No, that would be the inlet side. The circular pipe would be on the inlet side.

Q. You are referring to pipe 1?

A. Right, you could use it the opposite way as far as the open valve is concerned.

Q. That is, it is your opinion that the section of the pipe 1 is the inlet for this valve?

A. I couldn't say definitely because I haven't read this complete so as to see whether that was his intention. He has springs provided to hold the gate in place so far small pressures it could be used in that direction.

Q. If the pipe 1 were intended to be the inlet for the gate, that is, it is so mounted that the pipe 1 is the inlet end of this structure, then the structure conforms somewhat in the same nature to the Patent, the Gill and Belfield, and the other Patents which you have before you where the flow of liquid



(Testimony of Paul J. Thiess.)

through the valve is in the reverse direction to what it is in Smith; isn't that true?

A. Yes. [209]

\* \* \* \* \*

Q. Mr. Thiess, in Gill—well, let me come to this one general question and then I will go back to this. In the Gill Patent and [210] in the Patent to Belfield and in the Patent to Patterson which you have before you, this general question, that the flow of the liquid through those valves is in a direction opposite that in which the flow of the liquid is intended to be through the Smith Patent, or Smith valve; is that true?

A. It so states in the Patterson and the Gill Patents. I don't recall whether it's stated in the Belfield Patent. [211]

\* \* \* \* \*

Q. (By Mr. Cook): Well, Mr. Thiess, can you point out in any of the prior art Patents which we have before us any adaptation of the Hedrick structure as shown in the Patent plans?

A. In what respect?

Q. Well, in the Hedrick structure you have a certain construction here of how a gate is mounted and operated, a certain construction with grooves cut away and a recess in front of it, according to your testimony. Do you find that in any of the other prior art patents which we have before us, and particularly the subsequent to Hedrick?

A. I am afraid I have lost your question now. Well, the Gill Patent certainly shows the recess.

(Testimony of Paul J. Thiess.)

The Patterson Patent shows recesses. The Sumners Patent has recesses underneath on the underside of that valve seat.

Q. Are those recesses on the inlet side of the valve in this Patent?

A. No, they are not, according to the flow shown. [223]

\* \* \* \* \*

Q. Does the Patent to Gill disclose a wedge type gate valve?           A. Yes.

Q. Now will you please read from the Patent beginning in Column 1 at Line 50?

A. "The inlet passage 3 correspondingly slopes upwards from its outer end to the seat 5," is that what you mean?

Q. Then will you read through to numeral 11 at the top of the next column.

A. "The outlet passage as a whole similarly slopes down to its outer end, but the lower part of said outlet passage is cut away [224] at 11."

\* \* \* \* \*

Q. What would be your opinion as to the use for which the Gill valve is intended?

A. It would be intended for material which has heavy particles, as well as to convey the material in it.

Q. In your description of the valve in your testimony on direct examination did you describe the valve, considering the right-hand 4 as the inlet end?           A. You mean did I?

Q. Yes.

(Testimony of Paul J. Thiess.)

A. I would so consider the valve should be installed and would be installed by most mechanics or pipefitters, and so forth, would use it.

Q. But at the time the Patent was issued or the Gill valve was developed somewhere between 1924 and 1927 I take it, apparently, it was the correct procedure to mount it the other direction, [225] wouldn't you say?

A. He so describes it, although I have never seen these Gill valves in operation,—

Q. Now the bevel on the bottom surface of the gate is intended to push the solid material to which end of the valve, the inlet or the outlet end?

A. It would be to the inlet end, the way I would install it.

Q. But according to Gill?

A. It's the outlet, according to Gill.

Q. Isn't it reasonable then to assume that he did not teach flushing that material into the flow from the inlet end?

A. It is possible. I don't think it greatly matters whether you have it on the inlet end or outlet end. When you open the valve the stuff is going to go on to some other point.

Q. Have you ever seen a valve like that shown in the Gill Patent in a pulp mill?

A. No, I don't believe I have. [226]

\* \* \* \* \*

Q. Have you ever seen a valve like that valve shown in the Summers Patent or in use for controlling flow of the pulp stock in a pulp mill?

(Testimony of Paul J. Thiess.)

A. No, I haven't. [235] \* \* \* \* \*

Q. Now referring to Letters Patent No. 1,179,047 to Snow, granted in 1916, is that a wedge type valve? A. It's a wedge type nature, yes.

Q. Well, when you take away the fancy operating mechanism, that is, the worm and the rack and the like, you have little left but a conventional wedge type valve; isn't that true?

A. Except that the back guide does not extend the full length of the wedge, which is common in our ordinary wedge type. [241]

Q. Your groove for the gate extends all the way around the valve; doesn't it?

A. The guide groove, you mean?

Q. The groove in which the gate—if you notice Figure 1, the lower end of the gate does not have a number but it is adjacent to number 20.

A. Yes.

Q. The groove shown at (Y) (?) 1 in the Figure (Y) (?) 1 extends all the way around the body of the valve, the valve housing?

A. Well, it extends in a lower semi-circle.

Q. Well, it extends all the way across the width of the valve and apparently up the sides?

A. Yes.

Q. In other words, insofar as the tubing throughway of the valve is concerned, there is a groove all the way around that for the gate?

A. Yes.

Q. Have you ever seen a valve like that shown

(Testimony of Paul J. Thiess.)

by Snow in an operation in a pulp mill for controlling the flow of pulp stock?

A. No, I don't believe I have. [242]

\* \* \* \* \*

Mr. Buckhorn: Your Honor, in connection with the Brooks Patent it will be recalled that defendants merely referred to the cutting edge, and it was introduced merely for the reason of showing that valves were old in the art prior to the date of the Smith Patent having a cutting edge on the lower edge of the gate plate, and no interrogation was directed to making any further comparison between the Brooks Patent and Smith, the plaintiffs' or defendant's valve. Obviously, they are otherwise entirely different structures. It would like—it would be like comparing the horse with the car. The differences are more or less obvious, but the only similarity which we pointed out was the cutting edge on the bottom of the gate.

Mr. Cook: It is your position, Mr. Buckhorn, that that is the only reason the Brooks Patent is cited, is to show a gate with a cutting edge? [246]

Mr. Buckhorn: That's precisely the only point which was asked on direct examination. [247]

\* \* \* \* \*

Q. (By Mr. Cook): Referring now to the Belfield Patent, Mr. Thiess, 105,027, granted in 1870, which is the inlet end of the valve as taught in the Patent?

A. That I wouldn't know. I didn't read it enough to find that.

(Testimony of Paul J. Thiess.)

Q. What are the elements ff, and I direct your attention to the sixth line from the bottom of Column 1 of the Patent.

A. Sixth line from the bottom?

Q. Yes, sir. A. Yes, inclined ribs.

Q. What is their function?

A. To help guide the valve plate.

Q. What is the shape of the valve itself, the valve member?

A. The valve within has a round face and a sloping back, sort of a square top, the seat of the stem.

Q. It's a circular face to fit against the circular seat as provided by the inner end of the pipefitting D; is that true? A. Yes.

Q. And the rear face of the valve member or gate is wedge-shaped? A. Yes.

Q. Or inclined in order to be urged against the seat by those inclined ribs; is that true?

A. Yes.

Q. Is that the function of the inclined ribs, is to engage the [250] inclined back face of the valve member and urge it into engagement with the valve seat? A. Yes.

Q. There would be little contact between the valve itself and the inclined ribs until the valve was practically in seating position, would there?

A. That's right.

Q. Is there any teaching in the Belfield Patent of a recess beneath the ribs?

A. I don't know. I don't know.

(Testimony of Paul J. Thiess.)

Q. Considering the inlet end as supplied by the pipefitting D which is the valve seat, if there were a recess it would be on the outlet side of the valve seat; is that right? A. That's right.

\* \* \* \* \*

Q. Let's go on the Patent to Patterson, please, 985,444, issued in 1911. In that valve which is the inlet end of the valve?

A. According to the Patent it's the D, in Figure 1. [251]

Q. In Figure 1? A. In Figure 1.

Q. D, you testified that there were grooves in this Patent formed by the gibs K. What is the function of gibs K in the Patent?

A. The gibs K is to help retain the valve guiding it towards the seat.

Q. In the same manner as the inclined ribs f in the Belfield Patent? A. Yes.

Q. And that horizontal line in Figure 1 beneath the letter K indicates that the shoulder k disappears into the side wall of the valve; is that true? A. That's right.

Q. And it was your testimony that beneath that shoulder in the area of the letters h and r in Figure 1 was a recess, is a recess?

A. That's right.

Q. Your testimony, I believe, during cross examination is that that would be an area of low pressure in the operation of the valve as shown in the Patent and that there would likely be an accumulation of pulp at that point; is that right?

(Testimony of Paul J. Thiess.)

A. Yes, sir.

Q. Have you ever seen a valve of this nature in use in pulp mills for controlling flow of the pulp stock? A. I don't believe so. [252]

Q. Refer to the German Patent Heinecke. Which is the inlet end of the valve?

A. I don't believe the Patent states.

Q. Does the groove in which the gate seats extend all the way around the floor of the valve?

A. Yes.

Q. Is this wooden model a true reproduction of the valve?

A. A representative production, reproduction.

Q. The date of the Patent is 1881, I believe, and if we were to follow the teachings of the other Patents of record in this suit we would assume that the inlet end were on the end opposite those little recesses e, wouldn't we?

A. You mean on the right-hand side?

Q. These little recesses e in the Patent would be on the outlet side of the valve?

A. Yes, sir. [253]

\* \* \* \* \*

Q. (By Mr. Cook): Mr. Theiss, is the Heinecke valve any more or less than a quick opening conventional type gate valve with three small flaring cavities in one wall of the groove?

A. It is distinctly different than the conventional type gate valve because it has these cavities which excludes the stock which come onto the blade, is very definitely set out in the Patent.



(Testimony of Paul J. Thiess.)

Q. Yes, I know it has three small half shaped openings which connect with a groove, but other than those V-shaped openings is there any difference between this and the ordinary gate valve?

A. No.

Q. That is the only difference in structure of this valve from a gate valve is that it has those three small openings in the side of that groove?

A. And three cavities as shown. [254]

\* \* \* \* \*

### Redirect Examination

Q. (By Mr. Buckhorn): Do you wish to correct any testimony that you may have made inadvertently or otherwise earlier upon cross examination as to the normal direction of liquid through a valve gate of that type?

A. Yes, because I looked at this in the manner in which this type of valve is used in some of the flow boxes, in which particular case we operate them from either direction and generally from the, from what is the outlet side of this pipe.

Q. Pardon me?

A. In flow boxes we operate a lot of them so that, normally, the inlet would be the pipe part of this.

Q. I see, but referring back to the questions which I have put to you upon direct examination of the other evening in which you stated that you had seen valves of the type shown in the Hedricke Patent installed in a mill, I believe in Everett, Washington in 1929, in which direction was the,

(Testimony of Paul J. Thiess.)

no, in which direction did the fluid flow through those valves which you saw installed in that year?

A. I would have to picture myself the vat box as it is constructed. It would be the opposite to this. [260]

\* \* \* \* \*

M. L. EDWARDS

was thereupon produced as a witness on behalf of Plaintiffs, in rebuttal, and, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Cook:

\* \* \* \* \* [272]

Q. I should like to supply you with a pad of paper and ask that you describe for the Court the operation of valves which control the flow of pulp in a pulp mill.

A. Well, I am a little bit cold in this case. I don't know what has been said before in the way of the nature of paper pulp as a material being handled, but, if it is in order, I would like to preface what I am saying about valves by a little statement about that.

Mr. Cook: Perhaps I might explain to the Court that Mr. Edwards has been in Cleveland, Ohio, up until last night and just arrived—no, midnight Wednesday, and he has just arrived in this part of the country, and does not know what has gone ahead up to this time in this case.

(Testimony of M. L. Edwards.)

The Court: He can make any preliminary statement he wants to make.

A. Thank you. Pulp fiber is extracted—the fiber I am speaking of now is extracted chemically from wood, and actually the fiber used in the Northwest averages probably one-thousandth of an inch in diameter and from a sixteenth to an eighth of an inch long. These fibers, in the process, are handled in solution, in water—it is mechanically mixed, as between the fibers and water. The fibers, being in suspension, are inclined to tangle, become blocked. In the handling of fiber pulp in water the fibers will cling to a sharp edge. It is the nature of these [275] fibers to form a mat very easily, and when the fiber pulp tries to flow through a small opening the tendency is for these fibers to collect in clusters and bridge the gap.

After this gap has been bridged, the fibers themselves act as a filter to allow water to pass, but the fibers collect back of this dam that is formed by the fibers themselves and build up a heavy plug of pulp ahead of the small opening.

Q. (By Mr. Cook): Mr. Edwards, the present case involves the use of the Smith valve. Are you familiar with the Smith valve?

A. I believe I am, yes.

Q. As used in pulp mills for controlling the flow of paper pulp? A. Yes.

Q. I should like to have you explain to the Court, if you will, just how these valves are used in pulp lines?

(Testimony of M. L. Edwards.)

A. Well, of course, a valve can be used at any time in a pipe line in which pulp flows where sometimes it may be necessary to shut off the flow, but a very common place is to use one on both sides of a pump in a piping system, where the pump may have, sometimes, to be isolated from the system for repairs, without emptying the pipe line or the tanks on either side of the pump.

Q. Could you sketch for his Honor a typical installation of this type of valve?

A. Well, I will attempt to sketch it. The pump, of course, is connected to the bottom part of the tank. A valve is placed between the pump and the tank. Then, on the discharge side of [276] the pump another valve would be located and then, leading from that valve, up away from the pump to some other place in the system, the pipe line is connected.

Q. Are these valves here that you have indicated valves of the type as shown in the Smith Patent?

A. The Smith valve would be very applicable to that kind of installation, yes.

Q. By the way, Mr. Edwards, do you know of the problems that confronted the pulp industry at the time Mr. Smith produced the Smith valve?

A. Well, I believe his valve came on the market about the same time or possibly a little before the time that I became connected with that industry.

I am not sure of the date. I heard about his valve after I had been in it a little while. I think it was around the beginning of the '30's. That is

(Testimony of M. L. Edwards.)

the time I became aware of the valve existing.

Q. Do you know what the problems were that that valve was supposed to solve? A. I do.

Q. Will you please state them?

A. Well, when paper pulp is—as an example, I have illustrated it here. When paper pulp is being pumped through a line, it is frequently necessary to shut the pump down and, on doing that, the valves on both sides of the pump are closed. Then it is [277] possible to open the pump for repairs. In that time the pipe line above the pump may be left—may remain full of paper pulp, and during those times the pulp that remains in the line—in case of a small leak through the valve, the water would drain out of the pump line, leaving the pulp in the line.

I have seen times when that has occurred, with pulp that happened to be in the line at the time the pump was shut down—the water will drain through, as I said a while ago, and the pulp will de-water, and leave all the fibers in a heavy plug above the valve.

I have seen pulp gathered in this manner become so heavy you would have to go in with a crowbar and dig it out.

I have seen it necessary to dismantle the pipe in order to remove plugs of pulp. Of course, that is a pipe-line problem, but the valve is near where the problem occurs.

The features of the Smith valve are its ability

(Testimony of M. L. Edwards.)

to open and close when these heavy plugs of paper stock occur in the valve itself.

Frequently, when a valve is left closed on a line like this, a small amount of leakage occurs, not to the extent I mentioned a moment ago, but a small amount of leakage occurs where the fibers close to the valve are forced by the pressure in the line into the small passages around the valve plate, and it becomes a very heavy plug there and makes it difficult to remove the valve. [278]

If the valve should be left open very slightly, the plugs will form at that opening and the fibers will extend through the opening.

The features of the Smith valve are to, not prevent this forming—of course, that could not be done—but to make it possible at the time the valve is closed to shear off this pulp that is in the way, and then in the grooves or slides at the side of the valve plate—where the plugs occur there are grooves that the valve plate slides in, which are open at one end so as the valve moves these plugs will be forced out into the open space rather than having to be held confined in the groove that does not have an opening for them to get out. [279]

\* \* \* \* \*

Mr. Cook: Defendant's Exhibit B-4.

Q. Does that patent disclose a gate slideable between ports?

A. I can see in Fig. 1—this patent is entitled "Head Gate." I can see in Fig. 1 and Fig. 2

(Testimony of M. L. Edwards.)

what looks like a gate operating against one port; it would not be plural—one port, not two.

Q. It is a gate closing a single port, is that right? A. That is the way I see it.

Q. Is that type of structure used in a pulp mill?

A. Well, it could be. Yes, I know of cases where it is used; however, not exactly this arrangement.

Q. Where are head gates of this nature used in a pulp mill?

A. The instance I was speaking of is in what we know as a head box or mixing box, commonly used at the head of certain paper mill machines, pulp mill machines. The gate I am thinking of is used in the opening of the wall of a tank, where the flow occurs from one part of the tank to another, and the tank has different compartments in it, and the gate would open and close this aperture in the partition in the tank or in this box. There would be one port involved. That is in answer to your question, I believe.

Q. Then it is simply a closure member for opening in the wall between two compartments in the tank, is that correct?

A. That is right, yes. [280]

\* \* \* \* \*

Q. The question is: Can you describe for the Court or explain to the Court the essential difference between the head gate such as shown by Hedrick and the valves shown in the Snow, Summers and Gill Patents?

(Testimony of M. L. Edwards.)

A. These are all to be placed in pipe lines where the pipes will be on both sides of the valve, while in the case of the head gate—that is an opening to open a flume, or the open box, an open box of some kind to a pipe. One involves one purpose and the other involves two purposes.

Q. Would you say that the valves shown by Gill, Summers and Snow involve a gate slideable between two ports, whereas the Hedrick Patent shows a valve closing a single port?

A. It certainly is evident in Plate 4 the valve is slideable between two ports, I would call them, and, in Plate 5, I see two ports—they are in little different proportions—and in Plate 6 I think there are two ports there. Yes. [282]

Q. Mr. Edwards, referring to Plate 4, which shows the drawings of the Gill Patent, could you say from an examination of the drawings which is the inlet port?

A. Well, if I were applying a valve of that kind to a pipe line, I think the port to the left would be the inlet port.

Q. That is the port 3?                      A. That is right.

Q. And would you say why you would apply it in that way?

A. Well, when the valve is open, of course, it would not make any difference; but when the valve is closed, when it is frequently important to do repair work on the packing box through which the valve stem goes, using Fig. 3 as the inlet on the left, when the valve is closed it would be possible



(Testimony of M. L. Edwards.)

to open up the packing box and repair it, because it appears that the sealing of this valve all takes place on the port to the left, next to that of the inlet 3, what I call inlet 3. Also, during times when the valve is closed the packing would not be subjected to pressure when the valve is closed against it and the packing would not be subjected to pressure during the time the valve is closed, and it might prevent leakage if that is so important, and it can be in many cases.

Q. Then it is your opinion that there is a sound reason for the sealing, sealing the pipe against the flow of fluid through the inlet 3?

A. Yes. Later—this is 1927—standard gate valves had [283] closure on both sides, that of course left the packing boxes free from pressure in either direction.

Q. Do you know whether or not it was conventional practice, ahead of 1930, for example, to construct valves with the gate so mounted as to seal the valves or close the valves against pressure of the inlet fluid, as in the Gill Patent?

A. I think, as I remember it, in valve construction at that time it was quite standard practice to close the valves, if I get your question correctly, so that when the valve is closed the packing box was free from pressure. Is that your question?

\* \* \* \* \* [284]

Redirect Examination

By Mr. Cook:

Q. Mr. Edwards, continuing for a moment with

(Testimony of M. L. Edwards.)

your discussion of the Gill Patent, the similarity of the seats 5 in the Gill Patent and the ring 15 in Defendant's Plate 2, your testimony that the seats are similar was simply a matter of structure, I take it, that one seat is like another seat?

A. That is what I mean, yes.

Q. In the valves as a whole is there a similarity or dissimilarity in those seats?

A. Well, I explained a while ago that there is dissimilarity in the nature of the ring type and the angle of approach there for performing a tight closure. I don't know just the object of these grooves on the back side of the Gill—

Q. With respect to the direction of flow through the Gill valve and through the valve shown in Plate 2, the direction of flow on Plate 2 being shown by an arrow so that there would be no question about the direction of flow there; is there a similarity or dissimilarity in the way those valves operate?

A. Well, I am not sure I understand the differences between all these different kinds of similarities you are talking about. I want to give the best possible answer I can.

Q. In the Gill valve it is true, isn't it, that the valve 7 is seated against the flow of liquid entering the valve, in its normal operation? [296]

A. The valve 7 seats against the flow of liquid, fluid, yes.

Q. And the opening in the wall 6, the cutout portion of the floor of the valve, and the small cut-

(Testimony of M. L. Edwards.)

out portion 15 around the discharge side of the valve, is that true?

A. Well, they would be on the discharge side of the valve if the flow went through the side 3 to side 4, yes.

Q. Whereas, in defendant's Plate 2, the cutout portion in ring 16 leaves a gap 18 on the inlet side of the valve, is that true?

A. According to the arrow indicating the direction of flow, that would be on the inlet side, yes.

Q. I believe it was your testimony on previous direct examination that a practical manner of mounting the Gill valve was so that the inlet flow came into the valve through the port 3, is that correct?

A. I said if I were mounting the valve under ordinary circumstances—I am familiar with the problems of valves in many cases—it would be right to mount it in that direction to gain accessibility to the parts of the valve while the valve is shut off.

Q. Mr. Edwards, referring to the Smith Patent, your previous testimony, I believe, was that the gate operates to clear these grooves of accumulation of pulp which may get in these grooves, due to the fact that there might be leakage around the edge of the gate? A. That is right. [297]

Q. I take it you were talking about a situation, as shown in your sketch, which would occur when the pulp filled up on the discharge side of the valve

(Testimony of M. L. Edwards.)

and the water had a tendency to leak back, is that true?

A. That is right. Of course, the shearing action would occur across the small openings in the valve, no matter on which side the plug would occur. The same thing would happen no matter which way the pressure happens to be across the valve, and if the pressure happened to be in reverse from the direction I was mentioning a while ago, this leakage problem would be more inclined to occur, but it would shear any pulp that might close the gap, even if the fluid flowed in either direction.

Q. I think that had not occurred to any of us before your testimony, but is that one of the reasons for the popularity of the Smith valve?

A. As far as I know, it is, yes.

Q. In that, if there is an accumulation of pulp in these grooves, because of the back flow and back pressure, then the operation of the gate will clean those grooves?

A. That is right. I am speaking about the opening when the pulp occurs, forms through an opening in the valve itself, it will shear it off down at the bottom of this V here, yes. [298]

\* \* \* \* \*

STANLEY WILLIAM ST. GEORGE

was thereupon produced as a witness on behalf of Plaintiff, in rebuttal, and, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Cook:

\* \* \* \* \* [299]

Q. (By Mr. Cook): Mr. St. George, can you explain to the Court the basic differences between a gate such as shown in the Hedrick Patent and the valve as exemplified in the patent before the Court in this suit?

A. The term "head gate" is commonly used to denote a head gate for the control or shutoff of gravity flow in a flume or ditch, such as used in irrigation, to allow a spillway to become operable or closed off to control the level of the water behind the pump.

With a dam you haven't only the head gate to control the overflow from the dam, but you have a penstock or a pipe line coming from the bottom of the dam, conducting the water under pressure to possibly a turbine. In those penstocks or pipe lines you have a valve.

The valve is a completely enclosed structure so that it will maintain pressure in the line both on the inlet side and outlet side of it, if the outlet does not drop the gravity.

A head gate of the type of the Hedrick Patent, or in the form of a head gate, if the pressure would

(Testimony of Stanley William St. George.)

increase on one side the flow would pile over the top of the gate. In other words, if the gate was closed and the pressure increased in the flume, it would throw the water over the top, like you would in a regular dam put in a ditch.

There is a difference between a structure known as a head gate, which is normally classified as gravity control, and a valve that is commonly designated as pressure control, one [309] being a plug in the line of a flume under pressure and the other being a dam or obstruction in the flow line. That would be my definition.

Q. Mr. St. George, is there an essential difference between a structure such as shown by Hedrick and the valve disclosed in this patent?

A. Essentially, I think, the same explanation I gave of a liquid being confined under pressure would cover that.

Q. Please refer to the Gill Patent, Defendant's Exhibit B-2 which is shown on Plate 4 of Defendant's Exhibit D.

In the Gill Patent—would you say the cutout portion in the wall 6 of the Gill Patent,—that is, the wall on the discharge side of the valve,—serves identically the same function as the cutaway portion of the ring 16, I believe it is, in Plate 2?

A. It is my impression that with the single-wedge type of disk shown in this Gill Patent the flow would come from the left-hand side going towards "B." On a single-wedge disk valve that is the way I would install it.

(Testimony of Stanley William St. George.)

These little cutaway portions, I would say they would be on the downstream side or away from the flow. The cutaway portions shown in Plate 2 here are on the inlet side of the valve. Primarily, they are both openings in the seat, not in the seating surface but in the port surface there.

Q. Can you tell me which is the inlet port of the Gill Patent, of the valve shown in the Gill Patent? [310]

A. If I was to have charge of installing this particular valve, without any instructions, I would put the pressure or inlet side at A-3 there.

Q. Why do you make that statement?

A. I would like to take just a half-minute to explain the wedge gate valve, if I may.

Q. What type of valve is the Gill valve?

A. It is a wedge gate valve, a single-wedge gate valve.

Q. Will you explain to the Court what you mean by a single-wedge gate valve?

A. Prior to about, I would say, 1912 or 1914, practically all gate valves, wedge gate valves, were single-wedge on one side or the other of the valve disk. I would say there were very, very few valves of any other type manufactured. That was due to the fact that they did not have accurate production machine tools which were developed during the first World War.

The production of a single wedge, and its mating surface, was comparatively simple, but the production of a double surface and its double-wedge seat-

(Testimony of Stanley William St. George.)

ing surface became a very big problem, so that prior to that time practically all manufacturers of valves produced only the single-wedge disk. It was standard practice prior to a long time before I entered the business to install those valves with the tapered wedge section on the downstream side.

From the advent of the double-wedge disk valve, the [311] valve being wedged on both sides, this type of valve, double-wedge valve, can be installed in a line with the inlet port in either direction,—it doesn't make a bit of difference,—and still does not make a bit of difference, but standard practice and standard usage throughout all the years was with the tapered section of the valve being installed on the downstream side, and you will find yet today thousands of them installed in that manner.

Q. You say the tapered section or tapered face of the valve is on the downstream side?

A. That is right. [312]

\* \* \* \* \*

Q. Will you please refer to the Belfield Patent which is Defendant's Exhibit C-1.

Will you please indicate which is the intake port of the valve shown in that patent?

A. This again is a typical single-wedge gate valve with slight modifications as to the design of the body.

Under normal and standard practice the flow in that valve would be from left to right, as shown in Fig. 1, and from left to right as shown in Fig. 2, likewise in Fig. 3.



(Testimony of Stanley William St. George.)

Q. Will you please describe the function of the valve to the Court, how this valve operates.

A. The valve disk itself is raised and lowered by a threaded [316] valve stem B. It is raised in its bonnet and the flow line comes through the valve in this manner (indicating). Cast in the side of the valve body on the downstream side of the seat are ribs on both sides. They are designated as f-f, and they are on an incline. The back side of the valve is inclined at the same slope as the ribs f-f so that when the valve comes down the wedging effect of the inclined plane of the back of the valve and the ribs match and the valve is shoved by its wedging action upstream and against the valve seating surface which is A. Where the two planes come together, they are forced forward by the pressure, forcing the disk towards the upstream side and seating the valve—I think that is D—against the seating surface A.

Q. I note that there is a clearance between the valve B when it is in closed position. Would you state the reason for that?

A. In a single-wedge disk-type valve, and also in modern double-disk valves, the valve operation gradually releases the seating surface—in this particular valve the ribs f-f—which allows the valve to drop more and more towards the bottom and wear takes place.

Q. You mean towards the bottom of the casing?

A. Towards the bottom of the casing. Therefore, if natural wear takes place, eventually the

(Testimony of Stanley William St. George.)

valve disk itself will hit the bottom and the valve will no longer be tight, because there is no further wedging action left. That space, when a valve is new, [317] is left there to take care of wear at the surface.

The Court: Are you going to ask anything more about this valve?

Mr. Cook: Just a question or two, your Honor.

Q. Is there good reason why any valves, such as shown in the Belfield Patent—and I mean this type of valve, single-wedge valves—is there any good reason why the valves are seated in opposition to the flow of the liquid through the valve? Is there a good reason for that?

A. The reason is that it is always desirable to force your valve against its seat in a single-wedge type of valve. That is the principle involved in it, to force your disk into tight contact with its seat.

Q. Why don't you employ the pressure of the liquid to seat the valve rather than wedge it against the seat against pressure of the liquid?

A. In that case your wedges would not be needed in any form at all. You could rely on pressure to hold it there, and if there was any slight amount of viscous liquids that would get on there, it would be held away from its seat and you would have consequent leakage.

Q. To mount them otherwise would affect the pressure of the line? A. Yes, it would.

Q. Would that be a practical method of operating these valves? [318]

(Testimony of Stanley William St. George.)

A. No, sir. As I stated before, the conventional and accepted practice of single-wedge gates has always been to place them with the pressure against the face of the valve and the wedging effect on the downstream side. I say, that is the conventional practice.

Q. Are these valves mounted tightly on the valve stem? Are they mounted rigidly on the valve stem so that they move rigidly into position?

A. No. There is always a certain amount of looseness between the valve and its valve stem.

Q. If pressure were behind the valve, as an aid to seating the valve, would there be any likelihood of the valve rocking on its support?

A. That would happen many, many times where the valve was installed with the flow on the downstream side against the back of the valve, and, as I explained before, the looseness of the valve disk itself, swinging on its stem as it comes down, with the pressure on the back side of it, the disk can, in some cases, swing over far enough on the bottom that it will lodge itself on the top of the seating ring and jam itself open. That has happened many times. [319] \* \* \* \* \*

Q. Mr. St. George, Mr. Edwards expressed the opinion that valves of the structure in the Gill Patent and the Belfield Patent would not be useful in a pulp mill for controlling the flow of stock.

Do you agree with that opinion? Would you please give him Defendant's Exhibit B. Do you have that?

(Testimony of Stanley William St. George.)

A. Yes, I have it now. In the Gill Patent, which would be comparable to any single-wedge type gate valve, when the valve is open there is a cutout between the valve disk and the seat on the upper side which allows products being conveyed in the line to enter the upper chamber of the valve body into which the valve itself has withdrawn.

In the event the valve was left open for a considerable time, without being closed, it is entirely possible that that cavity could fill up full of material and clog the valve so it would be difficult to shut. [320]

\* \* \* \* \*

In the Smith valve the gate itself projects completely through and to the outside of the body of the valve.

Q. That is correct. In other words, if the stuffing box in defendant's structure were filled up with pulp, nevertheless the gate extends out through that pulp and out through the stuffing box so it could not be kept from opening?

A. Not by material lodged above it, like it could in the Gill valve.

Q. Is that not also true of the Smith Patent?

A. It is true in that type of valve, yes.

Q. In other words, no pulp can get over the top of this gate?

A. Over the top of the valve disk itself.

Q. That is why the Gill Patent, the Belfield Patent, and that type of patent could not be used in pulp operation?

(Testimony of Stanley William St. George.)

A. Could not be used successfully; yes, that is right.

Q. But Mr. Smith, in devising this valve, provided a valve whereby deposits of pulp in the bonnet could not affect the operation of the gate, is that true?

A. A deposit of pulp above the gate could not happen in a valve of that structure, where the valve plate extends to the outside surface of the valve.

Q. By "that structure" you mean the Smith Patent or defendant's valve? [323]

A. Yes. [324]

\* \* \* \* \*

Q. Will you explain briefly to the Court the operation of the valve shown in the Patterson Patent?

A. The flow is indicated in this valve coming from right towards the left. Primarily, it is a modification of a single-wedge gate valve, having an inclined plane on the downstream side of the valve disk which meets an inclined plane in the valve body so that when the valve is closed it meets—when the valve is closed into a closed position it meets an inclined plane, and forces the valve against its seating surface F. I believe the seating surface of the valve is labeled "G" here. The valve is [325] suspended from a screw stem, which will pull it back up into the recess which I assume the letter "B" means, "L" being the screw that raises it up or lowers it.

The inclined plane, as I said before, forces the

(Testimony of Stanley William St. George.)

valve into a closed position against the upstream pressure, against the seat here. The clearance which is left in the valve is to compensate for and allow clearance for wear on the slope of the two wedging surfaces. Otherwise the valve would hit the bottom and, sometime in the future,—would hit the bottom after a slight amount of wear takes place there.

Q. Would you say that there is a recess in the valve shown by Patterson comparable to the recess in the Smith valve?      A. I would say no.

Q. The recess in the area indicated by reference to the letters "H" and "R" in Fig. 1 of the patent, are they structurally or functionally the equivalent of the recess in the Smith Patent, right beneath the valve?

A. I would say no, that they are not.

Q. And for what reason?

A. That recess there, the "R," is to allow space for the machining of the valve face. It is to allow tools to go in there and machine that surface.

Q. If you have a flow in the direction as indicated by the arrow "G," then the recess beneath the valve would not be in the same location as in the Smith Patent, is that true? [326]

A. That is right.

Q. I would like to have you turn to the German patent to Heinecke, Defendant's Exhibit C-12.

Is there any indication in the patent to Heinecke on which side of the valve are the cavities?

A. No indication on the drawing which way

(Testimony of Stanley William St. George.)

they would go, or which side these cavities would be with relation to the flow.

Q. Is there any given in the descriptive matter?

A. My interpretation of this—this is supposed to be a literal translation of the German patent itself?

Q. We have accepted it as such.

A. There is one sentence here by which my interpretation would be that the cavity “e,e,e” was on the downstream side. This is in Paragraph 2, the fifth line: “Besides, the valve is provided with cavities e,e,e in this case so that through them the thick fluid can escape from the valve seat upon the closing of the valve.”

Q. Do you find similar cavities in the Gill Patent? If you will, please, refer to the Gill Patent, Defendant’s Exhibit B-2.

A. I don’t seem to be able to find it. Those cavities shown in the Gill valve are comparable, and they are also on the downstream side.

Q. What is the reference numeral?

A. I believe that must be 15 that shows the cavity. [327]

\* \* \* \* \*

Q. I hand you a plastic and wood model of defendant’s valve, which is Plaintiffs’ Exhibit 7, and ask you if you find in that model a recess or cavity in the walls of the intake port, the inlet port, comparable to the cavity M shown in the Smith Patent?

A. Using this model here, in the Smith valve the

(Testimony of Stanley William St. George.)

difference is that one valve has a rounded bottom for its seating and the Smith valve is rectangular in shape in the bottom of its disk, or squared. [329] Both valves have a relief area which, in turn, are very much alike. I think in operation they would probably function exactly alike.

Q. In the Smith Patent, or the Smith valve, the recesses M, shown in Fig. 5 of the patent, are for what purposes? First, where are they located?

A. They are in the bottom and side of the inlet port.

Q. With relation to the grooves in which it slides? A. At the bottom of the groove.

Q. They are for what purpose?

A. When material is sheared down, during its travel downward, it is to allow the knife edge to cut the side of it as it reaches the bottom and force it in the direction in which the flow is coming, being held up away from the bottom and forming a cut-off seal there.

Q. There is what the Smith Patent refers to as a recessed gate in the floor on the intake side of the valve. Do you find that? I think you will find that also in Fig. 5. A. Fig. 5?

Q. Yes. Can you find the recesses, please?

A. I don't believe I do. Oh, yes. I see it now. Excuse me.

Q. Turn to Page 2 of the Smith Patent.

A. Yes.

Q. Would you read the paragraph beginning with Line 16, on Page 2. [330]



(Testimony of Stanley William St. George.)

A. It says, "Further, the grooves g in which the gate h is slideable are cut away as at m at the bottom on the inlet side, down to the inclined bottom surface j. See Figs. 1 and 5; thus any stock that has accumulated in said grooves is scraped off by the edge of the gate and discharged on to the bottom surface or floor of the housing and carried away with the next flow of material through the gate valve."

Q. Do you find a comparable structure, a similar structure, in defendant's valve, as exemplified in Plaintiffs' Exhibit 7?

A. The basic principle is identically the same, to my way of looking at it.

Q. Is there a recess or a cavity—the words used in the patent—in the wall of the valve casing here (indicating)?

A. It is relieved at the start of that circle, the section here (indicating), to arrive at a cavity form.

Q. Why would it be recessed at that point?

A. I think basically for the same reason as the rectangular disk is relieved in order to force any material down and back into the line of flow. That would be my impression.

Q. In other words, it is your opinion that the relief there, called a cavity in the Smith Patent, is exactly for the same purpose as a valve?

A. The principle is identically the same. [331]

\* \* \* \* \*

Q. (By Mr. Cook): Is there a relieved portion in the wall of the inlet housing by reason of its

(Testimony of Stanley William St. George.)

shape to conform to the shape of the housing at the valve seat?

A. In the model here I would say it would be awfully hard to judge whether there is relief there or not, but in the drawing of the valve it definitely shows a portion of the upstream seating ring cut away to do that, to achieve that effect.

Q. On the floor down here is an actual Fabri valve. Lest there be some complaint that the model is not a true and correct model, [332] I would like to have you step down here and examine the actual valve.

At the point where the grooves terminate in the valve is the triangular portion of the valve relieved so material from the grooves can be pushed with the flow?

A. The upstream seating surface of the disk is stopped just a little below that line—I am unable to see how this is constructed, whether it is cast steel or what—allowing free access there for any material to be shoved towards the upstream side, by the wedging action of the cutaway portion of the disk.

Q. Then it is your opinion that the function of that portion of defendant's valve is exactly the same as the function of that portion of the Smith valve?

A. The same principle, identically. [333]

\* \* \* \* \*

#### Cross Examination

Q. (By Mr. Buckhorn): You would not say

(Testimony of Stanley William St. George.)  
that the valve, as shown in the Gill Patent, could be connected in a flow line with the end B to the supply?

A. It could be, but it would be installed wrongly, for two reasons: One is that the valve itself is swinging loosely on the end of its stem and with pressure on the far side, against the back side of the valve, with the flow coming towards it, it would be entirely possible in that valve to get enough downstream movement as to cause the valve disk to impinge itself on the valve seat, stopping it from closing, and that is generally true of so many of the single-wedge type gate valves that are installed backwards. [343] \* \* \* \* \*

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[Endorsed]: No. 14422. United States Court of Appeals for the Ninth Circuit. The United States National Bank of Portland, Oregon, Trustee, and Walter G. E. Smith, Appellants, vs. Fabri-Valve Company of America, a corporation, Appellee. Fabri-Valve Company of America, a corporation, Appellant, vs. The United States National Bank of Portland, Oregon, Trustee, and Walter G. E. Smith, Appellees. Transcript of Record. Appeals from the United States District Court for the District of Oregon.

Filed: July 12, 1954.

/s/ PAUL P. O'BRIEN,

Clerk of the United States Court of Appeals for the Ninth Circuit.

In the United States Court of Appeals  
for the Ninth Circuit

No. 14422

THE UNITED STATES NATIONAL BANK OF  
PORTLAND, OREGON, TRUSTEE, and  
WALTER G. E. SMITH,

Appellants and Cross-Appellees,

vs.

FABRI-VALVE COMPANY OF AMERICA, a  
Corporation,

Appellee and Cross-Appellant.

STATEMENT OF POINTS ON CROSS-AP-  
PEAL, AND RESERVATION OF RIGHT  
TO DESIGNATE PORTIONS OF RECORD

Fabri-Valve Company of America, appellee and  
cross-appellant in the above-entitled action, states  
the following as its points on appeal:

1. The District Court erred in holding claim 3  
of the Smith patent infringed by defendant's gate  
valves.

Reservation: Fabri-Valve Company of America,  
appellee and cross-appellant in the above-entitled  
action, reserves the right to designate portions of  
the record within ten days of service of appellants'

and cross-appellees' designation, as provided in Rule 17(6).

/s/ ORME E. CHEATHAM,  
Of Attorneys for Appellee and  
Cross-Appellant

Acknowledgment of Service attached.

[Endorsed]: Filed July 20, 1954. Paul P. O'Brien,  
Clerk.

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[Title of U. S. Court of Appeals and Cause.]

STATEMENT OF POINTS ON APPEAL, AND  
DESIGNATION OF RECORD BY APPELLANTS AND CROSS-APPELLEE

Now comes The United States National Bank of Portland, Oregon, Trustee, and Walter G. E. Smith, Appellants and Cross-Appellees in the above-entitled action and adopts as the points of appeal upon which they will rely on appeal those points contained in the Statement of Points filed in the District Court of the United States for the District of Oregon and included in the certified Transcript of Record.

The above named Appellants and Cross-Appellees designate those portions of the record as filed in the District Court of the United States for the District of Oregon and included in the certified Transcript of the Record as those portions upon which it will

rely in support of its Statement of Points on Appeal.

THE UNITED STATES NATIONAL  
BANK OF PORTLAND, OREGON,  
Trustee, and WALTER G. E. SMITH  
Appellants and Cross-Appellees  
By COOK AND SCHERMERHORN,  
/s/ By HAROLD D. COOK,  
Of Attorneys for Appellants and  
Cross-Appellees

Acknowledgment of Service attached.

[Endorsed]: Filed July 22, 1954. Paul P. O'Brien,  
Clerk.

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[Title of U. S. Court of Appeals and Cause.]

STIPULATION BY APPELLANTS AND  
CROSS-APPELLEES AND BY APPELLEE  
AND CROSS-APPELLANT AS TO DESIGN-  
INATION OF RECORD

Comes now The United States National Bank of Portland, Oregon, Trustee, and Walter G. E. Smith, Appellants and Cross-Appellees, and Fabri-Valve Company of America, Appellee and Cross-Appellant in the above entitled action, and stipulate and agree that the following portions of the record as filed in the District Court of the United States for the District of Oregon shall be designated to constitute the record on appeal:

- A. To constitute the written record:
  1. Complaint.
  2. Answer.

3. Pre-trial Order.

4. The following designated portions of the transcript of testimony and proceedings at trial before Honorable Gus J. Solomon, Mar. 28, 1951: \* \* \* \*

5. Opinion of Honorable Gus J. Solomon, dated December 31, 1952.

6. Opinion of Honorable Gus J. Solomon, dated June 17, 1953.

7. Findings of Fact and Conclusions of Law.

8. Judgment.

9. Notice of Appeal by Plaintiffs-Appellants.

10. Plaintiffs' Undertaking on Appeal.

11. Notice of Appeal by Defendant-Appellee.

12. Supersedeas Bond of Defendant-Appellee.

13. Statement of Plaintiffs-Appellants' Points on Appeal.

14. Statement of Defendant-Appellee's Points on Appeal.

15. Stipulation by Appellants and Cross-Appellees and by Appellee and Cross-Appellant as to Designation of Record.

B. To be transmitted as physical exhibits:

1. Plaintiffs' Exhibits:

(a) Plaintiffs' Exhibit 1—United States Letters Patent No. 2,001,271;

(b) Plaintiffs' Exhibit 2—Blue prints (. . . sheet) of improved 14" gate valve manufactured and sold by licensees under U. S. Letters Patent No. 2,001,-271;

(c) Plaintiffs' Exhibit 3—Blue prints (4 sheets) of 14" gate valve manufactured and sold by defendant, Fabri-Valve Company of America:

(d) Plaintiffs' Exhibit 5—Aluminum model of gate valve manufactured and sold by licensees under United States Letters Patent No. 2,001,271;

(e) Plaintiffs' Exhibit 6—Plastic and wood model of gate valve manufactured and sold by licensees under United States Letters Patent No. 2,001,271;

(f) Plaintiffs' Exhibit 7—Plastic and wood model of gate valve manufactured and sold by defendant, Fabri-Valve Company of America;

(g) Plaintiffs' Exhibit 11—Catalogue issued by defendant, Fabri-Valve Company of America;

(h) Plaintiffs' Exhibit 12—Agreement, dated December 4, 1945, between Walter G. E. Smith and Western Machinery Corporation, an Oregon corporation, and assignment to United States National Bank of Portland, Oregon;

(i) Plaintiffs' Exhibit 13—Agreement, dated August 9, 1939, between the United States National Bank of Portland, Oregon, and Crane Co.;

(j) Plaintiffs' Exhibit 14—Agreement, dated May 13, 1938, between the United States National Bank of Portland, Oregon, and Crane Limited;

(k) Plaintiffs' Exhibit 21—Copy of advertisement appearing on page 109 of Vol. LVII, No. 11, of the magazine "Time" by Crane Co.

## 2. Defendant's Physical Exhibits:

(a) Defendant's Exhibit A—Certified copy of file wrapper and contents of United States Letters Patent No. 2,001,271;

(b) Defendant's Exhibit B—Copies of reference patents cited in file wrapper of United States Letters Patent No. 2,001,271, as follows:



- B1: United States Patent No. 109,001—Glass
- B2: United States Patent No. 1,613,509—Gill
- B3: United States Patent No. 259,658—Atcheson
- B4: United States Patent No. 988,777—Hedrick
- B5: United States Patent No. 1,753,524—Mawby
- B6: United States Patent No. 1,065,494 — An-  
derson
- B7: United States Patent No. 1,536,874—Bates
- B8: United States Patent No. 1,379,136—Sum-  
mers et al

(c) Defendant's Exhibit C—Copies of patents showing prior art:

- C1: United States Patent No. 105,027—Belfield
- C2: United States Patent No. 127,768—Hewes
- C3: United States Patent No. 233,180—Allt
- C4: United States Patent No. 286,656—Van Wie
- C5: United States Patent No. 494,579—Lunken
- C6: United States Patent No. 494,581—Lunken-  
heimer
- C7: United States Patent No. 494,582—Lunken-  
heimer
- C8: United States Patent No. 985,444—Patterson
- C9: United States Patent No. 1,179,047—Snow
- C10—United States Patent No. 1,483,041—Brooks
- C11: United States Patent No. 1,751,122—Barker
- C12: German Patent No. 17,094 (1882) Heinecke
- C12t: Translation of specification of German  
Patent No. 17,094 Heinecke

(d) Defendant's Exhibit D—Folder containing drawings of valves of Smith patent, and defendant, and prior art patents;

(e) Defendant's Exhibit E—Catalogue of Smith Valve Company;

(f) Defendant's Exhibit F — Photographs (F1, F2, F3) showing gate valve as manufactured by defendant, Fabri-Valve Company of America;

(g) Defendant's Exhibit G—Blue print showing gate valve as manufactured by defendant, Fabri-Valve Company of America, Group 301 3" Bonnet Stock Valve;

(h) Defendant's Exhibit I—Wood model of valve shown in German Patent No. 17,094—Heinecke;

(i) Defendant's Exhibit M—United States Patent No. 2,000,853—Lange.

Signed at Portland, Oregon, this 28th day of July. A. D. 1954.

THE UNITED STATES NATIONAL  
BANK OF PORTLAND, OREGON,  
Trustee, and WALTER G. E. SMITH  
Appellants and Cross-Appellees

By COOK AND SCHERMERHORN,  
/s/ By HAROLD D. COOK,  
Of Counsel for Appellants and Cross-  
Appellees

FABRI-VALVE COMPANY OF  
AMERICA,

Appellee and Cross-Appellant  
By BUCKHORN AND CHEATHAM,  
/s/ By ORME E. CHEATHAM,  
Of Counsel for Appellee and Cross-  
Appellant

[Endorsed]: Filed July 30, 1954. Paul P. O'Brien,  
Clerk.